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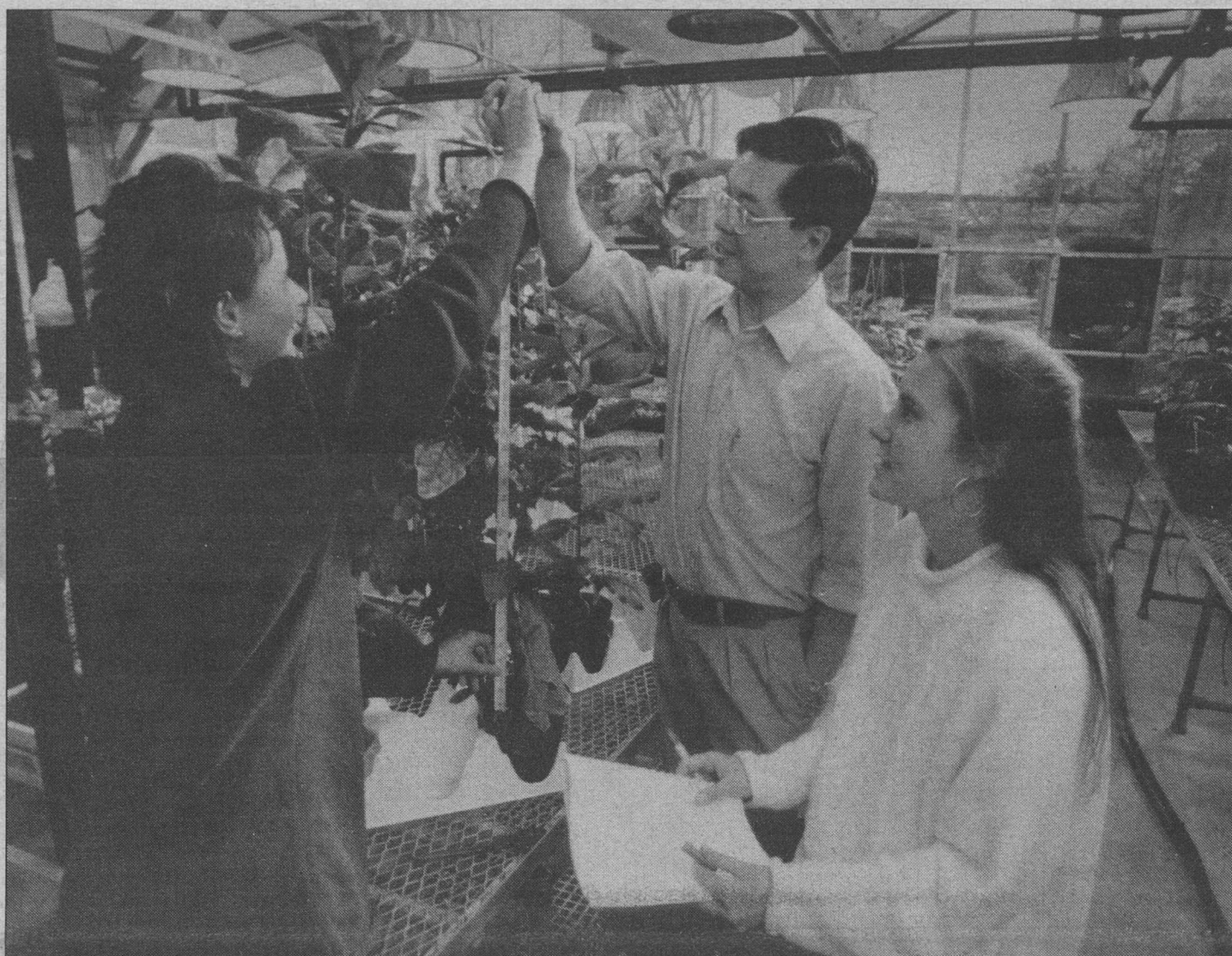
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Record

WASHINGTON
UNIVERSITY
IN ST. LOUIS

Vol. 17 No. 19 Feb. 11, 1993



David Ho, Ph.D., associate professor of biology, and German exchange students Christine Bockel, left, and Claudia Obermaier measure a transgenic (genetically manipulated) tobacco plant that is more than two feet shorter, stronger and more tolerant to drought than the typical or "wild" type tobacco plant to the left.

Genetically engineered plants

Biologist finds gene that controls height, strength, drought resistance

A plant biologist at Washington University has found a single gene in the barley plant that controls several traits — height, maturity, drought resistance and strength — in transgenic (genetically manipulated) plants.

David Ho, Ph.D., Washington University associate professor of biology, discovered the gene, which is activated during a stressful time of plant development, and genetically engineered it into tobacco plants.

The impact of such a find is far-reaching. While bigger is often assumed to be better, it's not always so in the plant world. Each year, for instance, growers around the world are robbed of plant yield because of a problem called lodging, where plants such as wheat, rice and soybeans fall over from their own weight and height. Shorter, stronger plants could eliminate this problem. Drought is the biggest economic stress on crop yield worldwide. Plants that on their own could withstand this common stress would lessen the importance of rain or costly, and resource-depleting, irrigation. Similarly, even the homeowner could benefit. The gene Ho has isolated might someday be incorporated into turf grass that would stay a certain height, withstand

drought and green-up earlier in the spring.

"One gene alone triggers these seemingly unrelated traits," says Ho. "When you compare the genetically engineered plants with the control plants you see that the transgenic plants are less than 45 percent as tall as the controls and that they're flowering, whereas the control plants are not. From the literature, we know that stunted growth and early flowering are responses to plant stress. Our transgenic plants, though, are not under stress — they just behave that way. We've trained them to respond to stress before stress appears."

Disputing long-held notions

Ho's discovery disputes long-held molecular biology notions that such divergent traits could only be controlled by dozens of different genes and that these multigenic traits could never be genetically "programmed" into a plant. His discovery opens up intriguing possibilities for growing grains such as wheat and rice that would resist lodging and withstand drought stress; lawn grasses that would need less mowing and watering; ornamental plants, such as petunias and geraniums, that would flower earlier, and, through an increased vascular system, be bushier and stronger;

and dwarf fruit trees that would flower earlier and withstand drought. Everyone from the homeowner to the mega-farmer to the horticulturist would benefit.

"Resistance to environmental stresses such as drought has always been considered multigenic," says Ho. "But we have shown that this one gene, and nothing else, has been able to elicit a whole array of standard stress responses in tobacco plants. The gene apparently triggers a very complex sequence of events very early in plant development."

To protect his discovery, Ho has filed a patent with the U.S. Patent and Trademark Office in Washington, D.C. He presented his research at the annual meeting of the Midwestern Plant Biotechnology Consortium on Dec. 3, 1992, in West Lafayette, Ind.

Surviving stress

In 1987, a former graduate student in Ho's laboratory, Bimei Hong, Ph.D., now at the University of California, Riverside, isolated the barley gene, one of a large number of plant genes called late embryogenesis abundant (LEA) genes. Ho's laboratory has spent much of the past five years characterizing the gene and its proteins, and he has published a series of papers on the gene. Plant molecular scientists throughout the 1980s have been interested in LEA genes because they are expressed near the end of a plant's development, a time when the plant must protect itself to survive.

"Plant stress is different from animal stress because plants are not mobile," Ho explains. "Thus, because plants cannot remove themselves from stressful situations, they must adjust themselves to survive. Most of the yield reduction in agriculture is due to plant stress, with an impact in the billions of dollars annually. The function

Schvey to head summer Globe Theatre program

Henry Schvey, Ph.D., chair of the Performing Arts Department, has been selected to head a new summer theatre program at the Globe Theatre in London, England.

"Shakespeare's Globe," an intensive four-week acting and directing program focusing on the works of William Shakespeare, is open to college students nationwide.

The London-based program, which is presented by Washington University and



Henry Schvey

the International Shakespeare Globe Centre in London, will run from July 5-30. The International Globe Centre was established by American actor and film director Sam Wanamaker in 1970 to reconstruct Shake-

speare's Globe Theatre, which was destroyed in a fire several hundred years earlier.

"Reconstructing the Globe Theatre has been Sam Wanamaker's dream for more than 20 years, and it is really an honor to have been selected by him and the Globe organization to head their summer school," says Schvey. "The Globe Theatre is something the whole world will be aware of in less than two years, when the theatre is completed."

Schvey notes that the Globe Theatre is not just a replica to be studied or looked at, but to be used. There will be no artificial lighting, fly space or other technical facilities associated with contemporary theatre. The companies performing there will be

Continued on page 8

Conference explores non-violent methods of settling disputes

The renunciation of military force and alternative non-violent methods for settling national and international disputes will be examined during a conference that begins at 9 a.m. Tuesday and Wednesday, Feb. 16-17, in the Women's Building Lounge. The conference, titled "Quietism and Pacifism in the Western Monotheisms," is free and open to the public.

Peter Steinfels, senior religion correspondent for The New York Times, will keynote the conference at 11 a.m. Feb. 17 in Graham Chapel. His lecture, "When There Is No Peace: Being Honest in Pacifist Thinking," is part of the Assembly Series.

The conference builds upon a series of four lectures that were presented at Washington in spring and fall 1992. During the lectures, Michael Broyde, assistant professor of religion at Emory University, Abdulaziz Sachedina, professor of religion at the University of Virginia, and John Howard Yoder, professor of theology at the University of Notre Dame, examined the concept of pacifism in Judaism, Islam and Christianity, respectively. In addition, Edward M. Gaffney, dean of the Valparaiso (Ind.) University School of Law, discussed religious pacifism and public policy.

At the Feb. 16-17 conference, Broyde, Sachedina, Yoder and Gaffney will reiterate their views during panel discussions, which

Continued on page 6

In This Issue...

Adult-onset diabetes: School of Medicine researchers find link with abdominal obesity *Page 2*

A love of learning: Dean Shirley K. Baker became a librarian, in part, because she never wanted to leave college *Page 3*

Ibsen classic: "Hedda Gabler," a dramatic story about a woman caught in an unforgiving society, will be performed *Page 6*

Continued on page 6

Medical Update

Abdominal obesity linked to adult-onset diabetes

Abdominal obesity appears to be a stronger factor than age in the development of adult-onset diabetes in older adults, according to researchers at the School of Medicine.

Researchers studied 67 men and women aged 60 to 70 to find out whether aging or belly fat is the bigger factor in the decline that occurs in the body's ability to regulate the blood sugar, or glucose, level as people grow older. The inability to regulate blood sugar is known as glucose intolerance. Glucose intolerance develops when the body becomes resistant to the actions of insulin, the hormone responsible for lowering blood sugar levels. Subjects were evaluated for body fat distribution, level of physical fitness, glucose tolerance and insulin resistance.

Forty-three subjects who had varying degrees of insulin resistance were found to be significantly bigger around their chest, waist and hips. Researchers found that when the effects of varying waist circumference were statistically controlled, other factors, such as age, fitness level, total body fat and the waist-to-hip circumference ratio, did not explain the inability to regulate blood sugar level.

"Basically, if we take any measurements in the trunk region, those who have impaired glucose tolerance and insulin resistance tend to show more central adiposity (fat)," says Wendy M. Kohrt, Ph.D., research assistant professor and principal investigator of the study. "We found the same held true in both men and women."

Previous studies in middle-aged subjects have established that abdominal fat is related to insulin resistance and glucose intolerance. But this is the first time researchers have distinguished between the insulin resistance of aging and insulin resistance associated with abdominal obesity.

What frequently occurs with aging, Kohrt says, is that fasting blood sugar level gradually goes up. Moreover, anytime a meal containing carbohydrates is eaten, blood sugar level will increase to a higher level and stay elevated longer than it would have when the person was young.

Blood glucose levels are held in check with insulin, the hormone secreted by the body to clear glucose from the blood into muscles, where it is stored for energy. With advancing age, Kohrt says, the insulin produced isn't as effective in controlling blood sugar, so blood sugar remains high for longer periods. To offset the high sugar levels, the body oftentimes compensates by secreting more insulin. As a result, Kohrt says many older people with high blood sugar levels also have high insulin levels which can make them insulin resistant and lead to non-insulin-dependent, or adult-onset, diabetes mellitus.

"Typically, an older person who receives insulin in an amount equal to that given a young, healthy person clears much less sugar or glucose from the blood," says Kohrt. "As a result, we say the older person is insulin resistant, whereas the young person is insulin sensitive. Insulin sensitive means that the insulin they produce is very effective at regulating the blood sugar level."

To determine insulin sensitivity, a procedure called the hyperinsulinemic, euglycemic clamp was performed. After fasting, the men and women were infused with insulin, as well as with a glucose solution that prevented the blood sugar level from dropping. By measuring how much glucose had to be provided to maintain the blood sugar level, they could assess how sensitive a subject was to insulin.

Five subgroups emerged: strictly normal subjects whose glucose tolerance was the same as that in a control group of people aged 20 to 30; high normal subjects whose glucose levels were higher than those typically seen in younger subjects; subjects with impaired glucose tolerance; subjects with non-insulin-dependent diabetes

mellitus (NIDDM); and an unusual group that had abnormal glucose tolerance as a result of a limited ability to secrete insulin, rather than as a result of insulin resistance. Subjects in the high normal, impaired, and NIDDM groups were significantly more resistant to insulin than the young and older subjects with strictly normal glucose tolerance.

"If we look at the 13 older people in our study who had strictly normal glucose tolerance, they were not distinguishable from young people, in that they were just as sensitive to the actions of insulin," says Kohrt. "Although these older people were fatter than the young people, they had markedly less fat in the abdominal region than the older people who had abnormal glucose tolerance and insulin resistance. That in itself is argument against the theory that there is an unavoidable deterioration in glucose tolerance and insulin sensitivity with aging."

The researchers looked at total body fat and fat distribution, which they determined with skinfold thickness measures — an index of the amount of fat stored just beneath the skin — and body circumference measures — an indicator of both internal and subcutaneous fat.

"What we find with aging is that there is a disproportionate accumulation of fat in trunk regions of the body. Some of this excess fat is stored just under the skin, but much of it is stored internally, in the visceral region of the abdomen," says Kohrt.

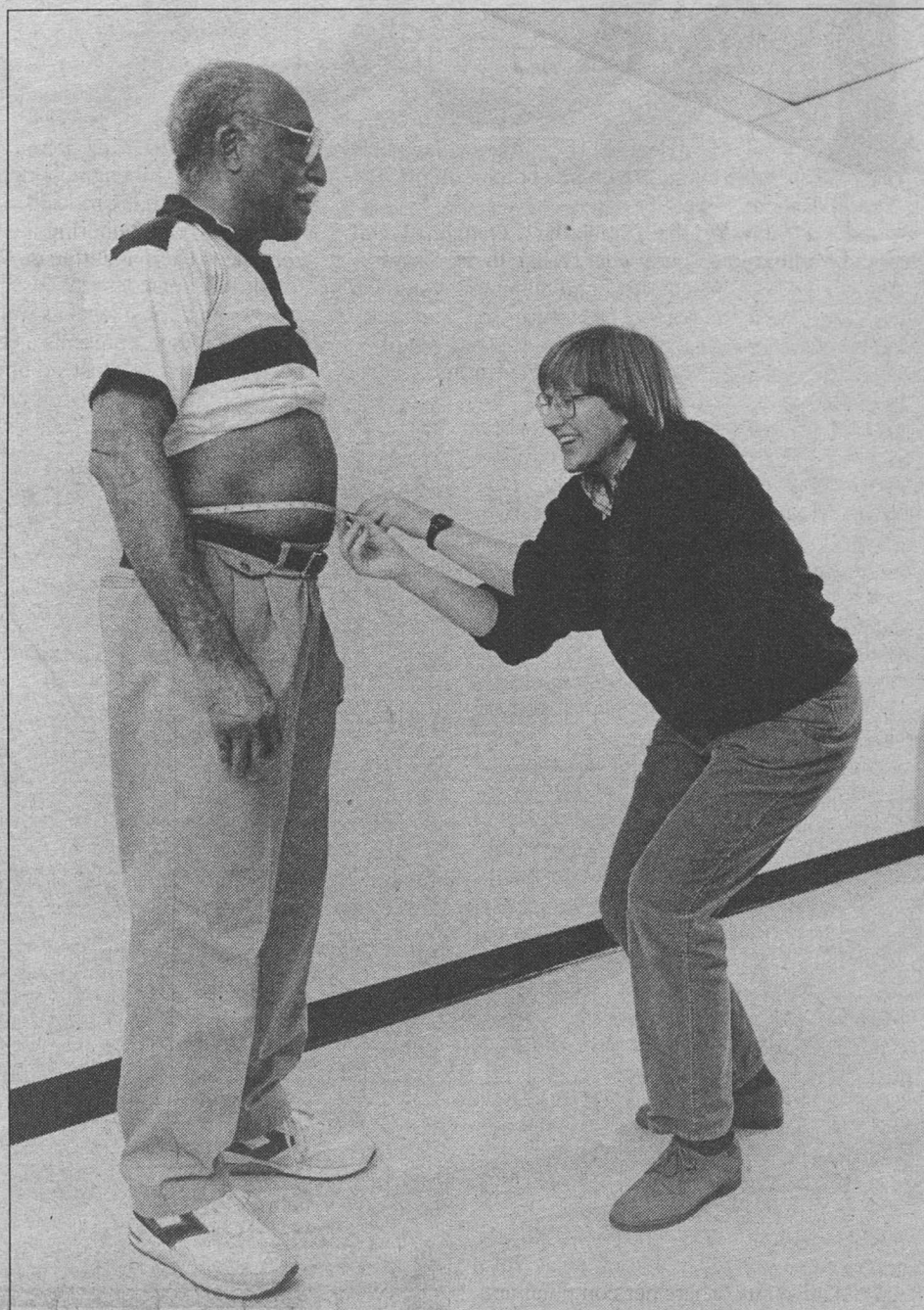
Although the most accurate way to assess intra-abdominal fat is by computer-assisted tomography, or CAT scans, simple circumference measures are good indicators of abdominal obesity. And while Kohrt found that waist, chest and abdominal circumferences were all strong predictors of insulin resistance, the strongest indicator was the waist circumference. She found that older men who were insulin resistant had waist sizes that were much larger than young men in the control group, whereas men who were insulin sensitive (the strictly normal and insulin-deficient groups) had waist sizes that were only slightly larger than the young men. The same was true for women.

Students honor outstanding faculty

The School of Medicine's class of 1994 recently honored 29 faculty members with the Distinguished Service Teaching Award for their outstanding teaching for the 1991-92 school year. Established in 1990 as an expression of appreciation, the award recognizes professors who devote time and energy to the preparation and delivery of excellent lectures.

Faculty members who teach three or more hours are eligible for the award. Winners were selected by majority vote. Those chosen to receive the award are:

First-year curriculum: Dana Abendschein, Ph.D., research associate professor of cell biology and physiology; John P. Atkinson, M.D., professor and chairman of the Department of Internal Medicine and professor of molecular microbiology; Glenn C. Conroy, Ph.D., professor of anatomy and neurobiology; S. Bruce Downton, M.B., B.S., assistant professor of genetics and pediatrics; Jeffrey I. Gordon, M.D., professor of medicine and Alumni Professor and Head of the Department of Molecular Biology and Pharmacology; George S. Kobayashi, Ph.D., professor of medicine and molecular microbiology; Jeff W. Lichtman, M.D., Ph.D., professor of anatomy and neurobiology; Dennis Y. Loh, M.D., professor of medicine and of genetics and molecular microbiology; Edwin McCleskey, Ph.D., associate professor of cell biology and physiology; Robert W. Mercer, Ph.D., assistant professor of cell biology and physiology; Stanley Mislis, Ph.D., associate professor of cell biology and physi-



Wendy M. Kohrt, Ph.D., measures Benjamin Jenkins, 70. Kohrt is studying the connection between abdominal fat and the development of diabetes in older adults.

"Our study cannot rule out the possibility that there is a decline in glucose tolerance associated with the aging process. It does suggest, however, that many of the changes that have been attributed to aging are the result of changes in regional adiposity, which is probably secondary to the decline in physical activity that frequently accompanies aging," says Kohrt. "The

good news is that it's something that is very amenable to change through modest dieting and exercise."

—Kleila Carlson

Record

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Washington
WASHINGTON UNIVERSITY IN ST. LOUIS

Washington People

Baker blends library tradition and technology

Shirley K. Baker, dean of the Washington University Libraries, decided she wanted to be a librarian while taking a bath in a hotel room in Ranchi, India.

"It was in the bathtub that I thought, 'I really want to be a librarian. That's what I'd like to do,'" says Baker, who was a Peace Corps family planning volunteer in Bihar, India, from 1967-69. "I had a fever so I was soaking in the bathtub — a big luxury. We took showers out of buckets in our village. So I remember the bathtub clearly."

Baker says a key element in her decision to become a

librarian was her "love of learning and wanting to know something about everything." Her love of learning was encouraged by her mother. "My mother's education ended in the ninth grade when her mother died, leaving six other children to be cared for. Nonetheless, as we shelled beans or canned tomatoes, my mother would tell us stories about her school days, books she'd loved and how fast she was at math. Also, even in my rural school district — one-room schools through the sixth grade — there were people who set high standards and encouraged me to go as far as I could."

"For my being a librarian, not wanting to stop learning was a critical factor. For years I was looking for a short answer to 'Why did you become a librarian?' One day my husband (book conservator Richard C. Baker) said, 'Shirley you became a librarian because you never wanted to leave college.' He was right."

Baker's love of learning did bring her back to college, but only after working with computers at American Telephone & Telegraph Co., and spending two years in the Peace Corps. After her stint in India, Baker spent three years at the University of Chicago, where she earned master's degrees in library science and in South Asian languages and civilizations, both in 1974. After finishing her degrees, she was hired as a librarian at Northwestern University, where her computer and business background, along with her graduate degrees, made her stand out among 100 applicants.

She left Northwestern after only two years, when both she and her husband were recruited by Johns Hopkins' Eisenhower Library in Baltimore, Md. Baker says making successful moves in two-career families is a challenge. "You can't turn down a good opportunity even if it happens a little sooner than you'd like." During their stint in Baltimore, Richard Baker moved from Johns Hopkins to the Smithsonian. Shirley Baker stayed at the Eisenhower Library, was promoted to department head, began to publish articles and became active in professional organizations.

After six years at the Eisenhower Library, Baker became assistant director, and later associate director for public services at the Massachusetts Institute of Technology (MIT) Libraries in Cambridge. She says she was drawn to MIT because of the opportunity to use her knowledge of technology, along with her experience in traditional library sciences.

In 1989 Baker came to Washington University as dean of University Libraries. As dean, Baker is responsible for Olin Library and seven departmental libraries on the Hilltop Campus: art and architecture, biology, chemistry, earth and planetary sciences, East Asian, mathematics and music. The libraries, through 132 staff, support Washington's teaching and research by building, organizing and preserving collections and by providing information to students, faculty, staff, members of the St. Louis community and to scholars worldwide.

The libraries hold more than two million books, more than 10,000 journal subscriptions and substantial collections of manuscripts, maps, and audio, video and electronic information.

Since Baker's arrival, she has spearheaded an electronic revolution in the University Libraries. In November 1991, the libraries launched a three-year project to complete the computerization of the entire card catalog. Baker says the project is 90 percent complete and will be finished by summer 1994.

Individuals may use the computer to find books, journals and other materials from all of the Hilltop Campus libraries, with the exception of the law library. The new system enables library users to save time by conducting their research from one location. Furthermore, those who have computers with modems or access to the Internet, a nationwide electronic system, may view the catalog from their homes or offices, regardless of whether they live in St. Louis or France.

To broaden services to the community, the libraries recently added to the computer catalog several electronic indexes to journal articles. Scheduled to be added this

semester is the Engineering Index publication, the major index to engineering literature. The late John Butler Johnson, a civil engineering professor at Washington, founded the index in 1884. The project is being funded by an endowment honoring the late St. Louis waterworks engineer Thomas Jefferson Whitman, the brother of poet Walt Whitman.

On a national level as well as at Washington, the advent of technology represents a change in the way libraries deliver services. "Instead of merely measuring quality by the number of books or journals we own, we also need to

Indeed, although the dean knows how to use technology, she has a "great respect for tradition. She respects the printed page and the digitized page," says Jay K. Lucker, director of libraries at MIT and a member of the University Libraries' national council. Lucker says Baker's work at MIT and at Washington has earned her a national reputation as an innovator who knows how to maximize technology to increase libraries' support of higher education.

While print continues in importance, the volume of published materials continues to grow so that no single library can possibly buy all of it. "An incredible amount of

material is being published now. Ninety percent of the scientists who ever lived are alive and publishing today so, compared to a century ago, when it was possible to acquire almost everything published, there is no way it can be done today."

Baker therefore is working locally, regionally and nationally to strengthen cooperative sharing arrangements with other libraries. Such arrangements allow the University Libraries to borrow materials from other libraries and guarantee the University's willingness to lend in return.

The Missouri Library Network Corp. (MLNC) is one of the chief agents of cooperation among Missouri libraries. Through MLNC, Baker has worked for closer cooperation among libraries of all types in the state. She is vice president of the MLNC board and chairs the board's telecommunications committee.

Recently, as a member of the Association of Research Libraries' (ARL) access to information resources committee, Baker co-authored a critical paper, which focused on sharing resources among libraries. The work also outlined an agenda for libraries to gain access to materials they don't have. The ARL is composed of library directors from the largest and most prestigious libraries in North America.

The paper was discussed at the American Library Association's January conference, which was held in Denver, Colo. Paul Mosher, director of libraries at the University of Pennsylvania, said the paper outlines the key library issue for the 1990s.

But despite the advantages of technology, most library users are not likely to read entire books from a computer screen anytime soon. Baker says traditional publishers view such a venture as quite risky. "The publishers know how to make money on print, but they don't know how to make money electronically. Until they figure that out, that's not going to become the way the world goes," says the dean.

Electronic technology, coupled with changes in the ways students and faculty use the libraries, has paved the way for an

even bigger change at Olin. The main library is 30 years old and, with the planned removal of the card catalog, is due for a renovation, says Baker. Planning is under way for the first major remodeling of the library since it opened in 1962. "Making Olin a better library for the Washington University community is the key goal of the renovation," says Baker. "We want faculty and student input and we will consult regularly with our Library Council, the Student Committee on Olin Library and other appropriate groups."

All of the libraries on the Hilltop Campus will be affected by plans to open an auxiliary facility in the former Famous-Barr building on Forsyth Boulevard. The facility, which will open this summer, will occupy the lower level of the building.

The facility will house lesser-used and more valuable older books and also materials that are now located in a storage facility at the Tyson Research Center in Eureka, Mo., about 25 miles away. "The new facility will make it easy for students and faculty to go there via the campus shuttle services," says Baker, "or to request, by phone, fax or electronic mail, that materials be sent from the library to Hilltop locations."

"Libraries grow inexorably and the Clayton facility will give us 15 years of collection growth," adds Baker. "Being able to shift lesser-used materials to the facility will free up much-needed space for studying and working in the Olin Library and other libraries on the Hilltop Campus."

Moving a large library system and its user community from the traditional slow-changing ways of operation into a dynamic, complex and electronic organization is no easy task. But Baker loves challenges. "I've always been hired into jobs that are incredibly challenging — where there's a lot of work to be done. I really like a challenge. I like making things happen."

— Carolyn Sanford



"I've always been hired into jobs that are incredibly challenging — where there's a lot of work to be done. I really like a challenge. I like making things happen."

measure the breadth of information outside the local library to which users can gain access, mostly by computer," Baker says. Her goal is to offer the University community an electronic window to the world of information — easy to use but rich in content. "WorldWindow," an experimental version of this goal, is currently available in Olin Library.

Computer technology is important, says Baker, "because it allows us to identify — in many different places around the world — books and journals that we don't have. It also allows us to request and sometimes deliver the materials electronically."

Although Baker is committed to using technology to enhance library services, she is equally committed to preserving the tradition of the printed page. "Our goals are still to buy everything we can possibly afford and have it here. When we talk about the vision of the library, the library as a place with books and print is still very important," said Baker, who in 1965 received a bachelor's degree in economics from Muhlenberg College in Allentown, Pa.

Calendar

Feb. 11-20



Exhibitions

"Fifteenth Annual High School Art Competition." Through Feb. 24. Bixby Gallery, Bixby Hall. Hours: 10 a.m.-4 p.m. weekdays; 1-5 p.m. weekends (closed Feb. 15). For more info., call 935-6597.

"Bruce Nauman: Light Works." Through March 21. Gallery of Art, upper gallery, Steinberg Hall. Hours: 10 a.m.-5 p.m. weekdays; 1-5 p.m. weekends. For more info., call 935-4523.

"Works of Graphic Satire." Through Feb. 19. Olin Library, Special Collections, Level 5. Hours: 8:30 a.m.-5 p.m. weekdays. For more info., call 935-5495.

"Washington University Art Collections — 19th- and 20th-century European and American Artists." Through May. Gallery of Art, lower gallery, Steinberg Hall. Hours: 10 a.m.-5 p.m. weekdays; 1-5 p.m. weekends. For more info., call 935-4523.

"Goddesses and Queens" coin exhibit. Through July 3. Gallery of Art, lower gallery, Steinberg Hall. Hours: 10 a.m.-5 p.m. weekdays; 1-5 p.m. weekends. For more info., call 935-4523.



Films

Thursday, Feb. 11

7 p.m. Dept. of Asian and Near Eastern Languages and Literatures Chinese Film Series presents "Rickshaw" (in Chinese). Room 219 South Ridgley Hall.

Friday, Feb. 12

7 and 9:30 p.m. Filmboard Feature Series presents "Casablanca." (Also Feb. 13, same times, and Feb. 14, 7 p.m.) Room 100 Brown Hall. Cost: \$3. **For 24-hour Filmboard hotline, call 935-5983.**

Midnight. Filmboard Midnight Series presents "Dr. Strangelove." (Also Feb. 13, same time, and Feb. 14, 9:30 p.m.) Room 100 Brown Hall. Cost: \$3.

Monday, Feb. 15

7 and 9 p.m. Filmboard Classic Series presents "Bringing Up Baby." (Also Feb. 16, same times.) Room 100 Brown Hall. Cost: \$3.

Wednesday, Feb. 17

7 p.m. Dept. of Asian and Near Eastern Languages and Literatures Middle Ages

Calendar guidelines

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

Calendar submissions should state time, date, place, sponsor, title of event, name of speaker(s) and affiliation, and admission cost. Quality promotional photographs with descriptions are welcome. Send items to Marie Doss at Box 1070 (or via fax: 935-4259). Submission forms are available by calling 935-8533.

The deadline for all entries is noon Tuesday one week prior to publication. Late entries will not be printed. The Record is printed every Thursday during the school year, except holidays, and monthly during the summer. If you are uncertain about a deadline, holiday schedule, or any other information, please call 935-8533.

Film Series presents "The Canterbury Tales." Room 219 South Ridgley Hall.

Friday, Feb. 19

6:30 and 9:30 p.m. Filmboard Feature Series presents "Apocalypse Now." (Also Feb. 20, same times, and Feb. 21, 7 p.m.) Room 100 Brown Hall. Cost: \$3.

Midnight. Filmboard Midnight Series presents "The Master Killer." (Also Feb. 20, same time, and Feb. 21, 9:30 p.m.) Room 100 Brown Hall. Cost: \$3.



Lectures

Thursday, Feb. 11

11 a.m. Division of Biology and Biomedical Sciences M.A./M.D. Program thesis defense, "Long-chain Acylcarnitine Increases Intracellular Ca²⁺ and Induces Afterdepolarization in Adult Ventricular Myocytes." Peter Fischbach. Room 9916 Clinical Sciences Research Bldg.

Noon. Dept. of Genetics seminar, "Molecular Biology of G Protein Subunits," Narasimhan Gautam, asst. prof., Dept. of Anesthesiology, WU School of Medicine. Room 816 McDonnell Medical Sciences Bldg.

Noon. Dept. of Molecular Biology and Pharmacology lecture, "Biochemical and Molecular Approaches to the Study of the Mechanism of Programmed Neuronal Death," Eugene M. Johnson Jr., prof., Dept. of Molecular Biology and Pharmacology, WU School of Medicine. The Philip Needleman Library, Room 3907 South Bldg.

Noon. Division of Biology and Biomedical Sciences Lucille P. Markey Special Emphasis Pathway in Human Pathobiology 1993 Spring Seminar Series presents "Developmental Regulation of Hemoglobin Genes," George Stamatoyannopoulos, U. of Washington, Seattle. Erlanger Aud., McDonnell Medical Sciences Bldg.

Noon. WU Student and Employee Health Service and the Office of Women in Science and Medicine seminar, "Medical Marriages," Joan Luby, director of infant/preschool clinic and instructor in psychiatry. Wohl Hospital Bldg. Aud.

2:30 p.m. Dept. of Mechanical Engineering and Center for Computational Mechanics seminar, "The Symmetric Galerkin Boundary Element Method and BEM/FEM Coupling," Stefan M. Holzer, postdoctoral research fellow, WU Center for Computational Mechanics. Room 100 Cupples II Hall.

4 p.m. Dept. of Chemistry seminar, "Paramagnetic Chromium Alkyls: Structure and Reactivity," Klaus Theopold, prof., Dept. of Chemistry, U. of Delaware. Room 311 McMillen Laboratory. (Coffee: 3:40 p.m.)

4 p.m. Division of Biology and Biomedical Science Student-sponsored seminar, "Genetics of Speciation: Variable Rates and Developmental Mechanisms in Amloystomatid Salamanders," Brad Schaffer, U. of California, Davis. Room 322 Rebstock Hall.

4:30 p.m. Dept. of Mathematics colloquium, "Estimates on the Bergman Kernel and Mapping Properties of the Bergman Projection," Jeff McNeal, prof., Princeton U. Room 199 Cupples I Hall. (Tea: 4 p.m., Room 200.)

Friday, Feb. 12

9:15 a.m. Pediatric Grand Rounds, "Infant Eating Disorders and Feeding Physiology: The Good, the Bad, the Ugly," Bradley T. Thach, prof., Dept. of Pediatrics, WU School of Medicine; Division of Newborn Medicine, St. Louis Children's Hospital. Clopton Aud., 4950 Children's Place.

10 a.m. Dept. of Electrical Engineering colloquium series, "Stack Algorithm Throughput in Multiple Access With N-conflicts," B.S. Tsybakov, prof. and head of Institute for Problems of Information Transmission, Academy of Sciences, Moscow, Russia. Room 305 Bryan Hall.

10 a.m. Molecular Genetics Program thesis defense, "Molecular and Genetic Analysis of Genes Involved in Glucose Repression of the GAL Genes in Yeast," James Erickson, WU graduate student. Room 816 McDonnell Medical Sciences Bldg.

11 a.m. Dept. of Computer Science colloquium, "Towards Uncheatable Benchmarks," Jin-Yi Cai, Dept. of Computer Science, Princeton U. Room 509C Bryan Hall.

Noon. Dept. of Cell Biology and Physiology seminar, "New Aspects of Globin Gene Regulation: Locust Control and Higher Order DNA Structures," Timothy J. Ley, asst. prof., depts. of medicine and genetics, WU School of Medicine. Room 423 McDonnell Medical Sciences Bldg.

4 p.m. Dept. of Anatomy and Neurobiology seminar, "Macro- and Microcircuitry of Rat Visual Cortex," Andreas Burkhalter, research assoc. prof., Dept. of Anatomy and Neurobiology, WU School of Medicine. Room 928 McDonnell Medical Sciences Bldg.

4 p.m. Dept. of Earth and Planetary Sciences colloquium, "Subduction-zone Asperities as Stress Concentrators: Inferences From the October 16, 1981 Chilean Compressional Outer-rise Earthquake," Steve Mueller, postdoctoral associate, National Research Council, U.S. Geological Survey, National Earthquake Information Center. Room 361 Natural Sciences Bldg.

4 p.m. Dept. of Music Lecture Series presents "Hidden Syllables: The *Syringa* of John Ashberry and Elliot Carter," William Matheson, WU prof., comparative literature. Room 8 Blewett Hall Annex.

4 p.m. Division of Hematology/Oncology seminar, "Proto-oncogenes, Tumor Suppressor Genes and the Control of Hematopoiesis," Alan Bernstein, head, Division of Molecular and Development Biology, Mt. Sinai Hospital, Toronto. Room 8841 Clinical Sciences Research Bldg.

4:30 p.m. Dept. of Mathematics colloquium, "Hyperbolic Dynamics and Rigidity of Invariant Geometric Structures," Renate Feres, prof., California Institute of Technology. Room 199 Cupples I. (Tea: 4 p.m., Room 200.)

Saturday, Feb. 13

9 a.m. Dept. of Anatomy and Neurobiology seminar, "Degeneration and Regeneration in the Mammalian Inner Ear," Barbara Bohne, prof., Dept. of Otolaryngology, WU School of Medicine. Erlanger Aud., McDonnell Medical Sciences Bldg.

11 a.m. Master of Liberal Arts Program and University College Saturday Seminars present "Barriers and Gates: Race and Immigration Policy in the United States — A Historical Perspective," Nancy L. Grant, assoc. prof., WU Dept. of History. Women's Bldg. Lounge.

Monday, Feb. 15

Noon. Dept. of Neurology and Neurological Surgery Research Seminar, "Cerebral Glucose and Amino Acid Metabolism Studied With C13 NMR," Edward Novotny Jr., Yale U. Schwarz Aud., first floor, Maternity Bldg., WU School of Medicine.

Tuesday, Feb. 16

4 p.m. Dept. of Anthropology Colloquium Series, "The St. Louis Art Market," Stuart Plattner, program director for cultural anthropology, National Science Foundation. Room 149 McMillan Hall. (Coffee: 3:30 p.m.)

Wednesday, Feb. 17

8 a.m. Dept. of Obstetrics and Gynecology Grand Rounds, "Vaginal Bleeding in Children," Diane F. Merritt, instructor, depts. of obstetrics and gynecology and pediatric and adolescent gynecology. Clopton Aud., 4950 Children's Place.

11 a.m. Assembly Series presents the Conference on Pacifism and Quietism with Peter Steinfelds, senior religion correspondent, The New York Times. Graham Chapel.

Noon. Office for Women in Science and Medicine Special Seminar, "Pathology, Radiology, Psychiatry — Women-friendly Specialties?" Deborah Gersell, assoc. prof., depts. of pathology and obstetrics and gynecology; Dixie Anderson, assoc. prof., Dept. of Radiology; and Cindy Florin, clinical instructor, Dept. of Psychiatry, WU School of Medicine. Erlanger Aud., McDonnell Medical Sciences Bldg.

Noon. Jewish Hospital Cancer Committee presents the Marilyn Fixman Clinical Cancer Conference, "Evaluation and Treatment of Hodgkin's Disease," Oliver W. Press, assoc. prof., Dept. of Medicine/Oncology, U. of Washington, Seattle. Brown Room, first floor, Steinberg Bldg., Jewish Hospital.

12:30 p.m. Neuroscience Luncheon Seminar, "Establishment and Maintenance of Neuropeptide Phenotypes," Kevin A. Roth, asst. prof., depts. of pathology and molecular biology and pharmacology, WU School of Medicine. Room 928 McDonnell Medical Sciences Bldg.

4 p.m. Dept. of Biochemistry and Molecular Biophysics seminar, "Ha-ras Oncogene Product p21: Structure and Function," Emil Pai, Dept. of Biochemistry, U. of Toronto. Cori Aud., 660 S. Euclid Ave.

4 p.m. Dept. of Mathematics Analysis Seminar, "Boundary Values and Cowen-Douglas Curvature," John McCarthy, prof., WU Dept. of Mathematics. Room 199 Cupples I Hall.

4 p.m. The Joint Center for East Asian Studies at Washington University and the University of Missouri-St. Louis present a colloquium, "Business and Politics in Taiwan's Democratic Development," Hung-mao Tien, prof. of political science, U. of Wisconsin, Milwaukee. Room 30 January Hall.

5 p.m. Division of Cardiology seminar, "Animal Models of Human Heart Disease," Steven M. Pogwizd, asst. prof., Dept. of Medicine. Room 601A, School of Medicine Library.

8 p.m. Dept. of English lecture, "Royal Authors and Royal Authority in Early Modern England," Kevin Sharpe, prof., Dept. of History; and South Hampton and Senior Fellow, U. of Huntington Library. Hurst Lounge, Room 201 Duncker Hall.

8 p.m. Dept. of English sponsors a reading from *Rattlesnake Farming*, Kathryn Kramer. Hurst Lounge, Room 201 Duncker Hall.

Thursday, Feb. 18

10 a.m. Division of Biology and Biomedical Sciences M.A./M.D. Program thesis defense, "Structure and Function of the Murine β -globin Locus Control Region 5'HS-3," Bruce Hug. Room 816 McDonnell Medical Sciences Bldg.

Noon. Dept. of Genetics seminar, "Ring Canals and Actin Filaments in *Drosophila* Oogenesis," Lynn Cooley, Yale U. Room 816 McDonnell Medical Sciences Bldg.

Noon. Dept. of Molecular Biology and Pharmacology lecture, "Spontaneous Inflammatory Disease in HLA-B27 Transgenic Rats," Robert E. Hammer, Dept. of Genetics, Howard Hughes Medical Institute, U. of Texas, Southwestern Medical Center. The Philip Needleman Library, 3907 South Bldg.

Noon. Pediatric Research Seminar, "Tyrosine Kinase Regulation of Receptor Endocytosis," Robert Fallon, asst. prof., depts. of pediatrics and cell biology and physiology, WU School of Medicine. Third Floor Aud., St. Louis Children's Hospital, 400 S. Kingshighway.

Noon. WU Student and Employee Health Service and the Office of Women in Science and Medicine seminar, "Women and AIDS," Linda Cottler, asst. prof. of epidemiology, Dept. of Psychiatry, WU School of Medicine. Wohl Hospital Bldg. Aud.

12:10 p.m. WU Gallery of Art lecture, "Goddesses and Queens," Kevin Herbert, prof. emeritus of classics and curator of "Goddesses and Queens" coin exhibit. Steinberg Hall Aud.

4 p.m. Assembly Series lecture, "Hot, Sexy and Safer," Suzi Landolphi, sex educator. Graham Chapel.

4 p.m. Central Institute for the Deaf Research Seminar, "Assessing the Benefits of Cochlear Implants in Children: Results After the First Year," Ann Geers, director, Clinical Services, CID. Second Floor Aud., CID Clinic Research Bldg., 909 S. Taylor Ave.

4 p.m. Division of Biology and Biomedical Sciences Student-sponsored seminar, "Chemical and Pharmacological Prospecting in the World of Plants," Norman Farnsworth, U. of Illinois, Chicago, Program for Collaborative Research in the Pharmaceutical Sciences and World Health Organization-Collaborating Centre for Traditional Medicine. Erlanger Aud., McDonnell Medical Sciences Bldg.

4 p.m. European Studies Program, Committee on Comparative Literature, Dept. of Music and Assembly Series present a lecture, "Regulated Anarchy: John Cage's *Europæras* and the Aesthetics of Opera," with Herbert Lindenberger, prof. of English and comparative literature, Stanford U. Hurst Lounge, Room 201 Duncker Hall.

4:15 p.m. Dept. of Philosophy colloquium, "Argumentation and Social Epistemology," Alvin Goldman, prof. of philosophy, U. of Arizona. Stix International House, 6470 Forsyth Blvd.

4:30 p.m. Dept. of Mathematics colloquium with Shanshuang Yang, prof., U. of California, Los Angeles. Room 199 Cupples I Hall. (Tea: 4 p.m., Room 200.)

Friday, Feb. 19

9:15 a.m. Pediatric Grand Rounds, "Interventional Cardiac Catheterization in Children: A Collaborative Approach to Complex Heart Disease," Nancy D. Bridges, asst. prof., Dept. of Pediatrics, WU School of Medicine; and director, Cardiac Catheterization Laboratory, St. Louis Children's Hospital. Clopton Aud., 4950 Children's Place.

Noon. Dept. of Cell Biology and Physiology seminar, "The Role of Nitric Oxide in Long-term Potentiation," Dan Madison, Dept. of Molecular and Cellular Physiology, Stanford U. Room 423 McDonnell Medical Sciences Bldg.

1 p.m. Solid-state Engineering and Applied Physics seminar, "How Does the Engineering Student Adapt to the Real World as a Project Engineer in an Electrical Contracting Company?" T.S. Barry, graduate student, Dept. of Electrical Engineering. Room 305 Bryan Hall.

4 p.m. Dept. of Earth and Planetary Sciences colloquium, "Mantle Structure and Composition: Perspectives From Seismology and Mineral Physics," Craig R. Bina, asst. prof., Northwestern U., Chicago. Room 361 Natural Sciences Bldg.

4 p.m. Dermatology Research Seminar, "Plaque-forming Capacity of Different Desmosomal Cadherins: Examination by Expression of Chimeric Junction Proteins," Sergey Troyanovsky, German Cancer Research Center, Room 7706 Wohl Hospital Bldg.

4 p.m. Microbial Pathogenesis Seminar Series presents "Iron Transport and Virulence in *Vibrio Cholerae*," Shelley Payne, Dept. of Microbiology, U. of Texas, Austin. Room 322 Rebstock Hall.

4:30 p.m. Dept. of Mathematics colloquium with Lucas Hsu, prof., Institute for Advanced Studies, Princeton U. Room 199 Cupples I Hall. (Tea: 4 p.m., Room 200.)

Saturday, Feb. 20

9 a.m. Dept. of Anatomy and Neurobiology seminar, "Regeneration in the Bird Inner Ear," Douglas Cotanche, Boston U. Erlanger Aud., McDonnell Medical Sciences Bldg.

11 a.m. Master of Liberal Arts Program and University College Saturday Seminars present "Modern Jewish Experience: The Westward Pursuit," Benjamin Taylor, asst. prof., WU Dept. of English. Women's Bldg. Lounge.

1-4 p.m. African and Afro-American Studies program presents a symposium, "Richard Wright and the 1950s" with panelists Julia Wright, Richard Wright's daughter, who is working on a memoir of her father and who will discuss the final decade of his life; Ollie Harrington, cartoon artist, fellow

expatriate; Gerald Early, prof. of English and African and Afro-American studies, WU; Amrit Singh, prof. of English, Rhode Island College; and Lynn Weiss, visiting asst. prof. of English and African and Afro-American studies, WU. Women's Bldg. Lounge.



Music

Friday, Feb. 19

8 p.m. Dept. of Music presents the Washington University Music Ensemble concert, "England c. 1550-1700: Music for Church and Chamber," directed by Donna Di Grazia. Graham Chapel.

8 p.m. Student Union and the Council of Students of Arts and Sciences present a concert, "Jammin' Toast '93" with performances by the WU Pikers, the WU Greenleafs, the U. of Illinois' Other Guys and Spizzwinks(?) of Yale University. (Also Feb. 20, same time.) Edison Theatre. Cost: \$5 for the general public; \$2 with a WU ID. For more info., call 935-1414 or 935-2017.



Performances

Saturday, Feb. 13

8 p.m. Edison Theatre "OVATIONS!" Series presents Brian Bedford performing "The Lunatic, the Lover, and the Poet." Edison Theatre. Cost: \$20 for the general public; \$15 for seniors and WU faculty and staff; and \$10 for students. For more info. or reservations, call 935-6543.

Sunday, Feb. 14

2 p.m. Edison Theatre "ovations! for young people" series presents "Mur-Mur (The Wall)" performed by actor-acrobats of Montreal's Dynamo Theatre. Edison Theatre. Cost: \$7. For info., call 935-6543.

Friday, Feb. 19

8 p.m. Performing Arts Dept. presents a play, "Hedda Gabler" by Henrik Ibsen. (Also Feb. 20, 26, 27, same time; Feb. 21, 7 p.m.; and Feb. 28, 2 p.m.) Edison Theatre. Cost: \$7 for the general public; \$5 for students, seniors and Washington University faculty and staff. For more info. and reservations, call 935-6543.



Miscellany

Thursday, Feb. 11

1-2:30 p.m. University College presents a short course, "Between Submission and Power: Women and Family in Islam," Fatemeh Keshavarz, asst. prof., WU Dept. of Asian and Near Eastern Languages and Literatures. Through March 4. Cost: \$75. For more info., call 935-6788.

Friday, Feb. 12

Noon. The Woman's Club of WU mini-luncheon and program, "Courageous Voices Echoing in Our Lives," presented by a group from the Older Women's League. Women's Bldg. Lounge. Cost: \$5 for members and guests. For more info. and reservations, call Annette Kimelman at 991-1261 or Jan Kardos at 763-0523.

Saturday, Feb. 13

9 a.m.-Noon. University College presents Career Workshops, "Changing Jobs — Changing Careers," Ellen Krout-Levine, coordinator of career programs, University College. Through Feb. 27. Cost: \$60. To register, call 935-6727.

Sports

Men's Basketball

Last Week: Carnegie Mellon 78, Washington 67; Washington 61, Chicago 54

This Week: New York University, 8 p.m. Friday, Feb. 12, Washington Field House; Emory University, 3 p.m. Sunday, Feb. 14, Field House.

Current Record: 10-10, 5-4 in University Athletic Association

With five conference games remaining, the Bears are still mathematically alive in the race for this year's University Athletic Association (UAA) title. Despite standing just one game above the five-hundred mark in conference play, Washington sits alone in second place and will have a chance to narrow the gap between the first- and second-place teams this Friday when it hosts league-leading and nationally ranked New York University (18-1 overall, 9-1 in the UAA). The Violets can sew up their first UAA men's basketball title if they defeat the Bears this weekend. Two weeks ago in New York, Washington dropped a 83-78 decision to New York University.

The Bears snapped a six-game road losing streak with a 61-54 victory over the University of Chicago on Sunday. In the second half, senior forward Charlie Borsheim, La Crosse, Wis., and freshman guard Gene Nolan, Chicago, Ill., combined to score 34 of the Bears' 40 second-half points. Borsheim finished with a game-high 24 points while Nolan, who scored the Bears' final 13 points of the game, had 19. In Friday's loss at Carnegie Mellon, Nolan and senior forward Lance Shoulders, Russell, Ky., led the Bears with 13 points apiece.

Women's Basketball

Last Week: Carnegie Mellon 59, Washington 53; Washington 52, Chicago 46

This Week: New York University, 6 p.m. Friday, Feb. 12, Field House; Emory University, 1 p.m. Sunday, Feb. 14, Field House.

Current Record: 17-3, 7-2 in UAA

For the second weekend in a row, the Bears split a pair of conference games on the road. The loss at Carnegie Mellon, followed by a win at Chicago, dropped the Red and Green one-half game behind

front-running New York in the UAA standings. The Bears have an opportunity to leap-frog past the Violets this Friday when New York University visits the Field House. Two weeks ago, the Bears fell 73-65 in New York.

The Bears jumped out to a 14-2 lead and enjoyed a nine-point halftime cushion at Carnegie Mellon. However, Washington collapsed both offensively and defensively in the second half, being outscored 41-26 after intermission. Junior center Brooke Kenyon, Phoenix, Ariz., notched a team-high 12 points.

The Red and Green nearly duplicated the scenario in Sunday's win at Chicago. The Bears jumped to a commanding 35-11 first-half lead, but were outscored 35-17 in the second frame. Junior guard Sarah Goldman, Nashville, Tenn., earned team-high honors with 11 points and four assists.

Men and Women's Swimming/Diving

Last Week: Idle

This Week: University Athletic Association Championships, Wednesday-Saturday, Feb. 10-13, Millstone Pool.

Current Record: Men: 8-2; Women: 8-1

A wave of excitement will hit the Washington Field House this week as more than 300 swimmers and divers from across the country take part in the 1993 University Athletic Association Championships. The UAA ranks among the most competitive NCAA small college conferences in the nation. As evidence, a total of 48 UAA student-athletes earned a sum of 136 All-America certificates at the 1992 NCAA Division III national championships. In addition, two UAA competitors earned individual national titles.

Prime contenders for the UAA men's title are Johns Hopkins and Carnegie Mellon, which placed a respective eighth and 12th nationally last year. On the women's side, Emory finished fourth nationally a year ago, Johns Hopkins was 12th, and New York University was 22nd.

From Thursday through Saturday, preliminary trials will begin at 11 a.m., and finals will start at 6:30 p.m., except on Saturday, when the finals will be held at 6 p.m.

Monday, Feb. 15

2-4 p.m. University College presents a short course, "The Romantic Symphonies of 'Spring,'" Sue Taylor, lecturer, WU Dept. of Music. Through March 8. Cost: \$75 (Friends of Music: \$65). For info. registration, call 935-6788.

Tuesday, Feb. 16

9 a.m.-5 p.m. Center for Interreligious Dialogue presents the Conference on Quietism and Pacifism in the Western Monotheisms, featuring several guest speakers. (Also Feb. 17, 9 a.m.-3:30 p.m.) Women's Bldg. Lounge. For more info., call 935-4470.

Suzi Landolphi combines humor, compassion in safe-sex message

Sex educator Suzi Landolphi will lecture at 4 p.m. Thursday, Feb. 18, in Graham Chapel. Her presentation, "Hot, Sexy and Safer," is part of the Assembly Series and is free and open to the public.

Landolphi combines humor, compassion and encouragement to educate about the HIV virus, AIDS and other sexually transmitted diseases and to encourage safer sex practices.

"Besides the use of condoms, her prescription for safe sex includes developing honesty, communication and trust in relationships — not rushing toward intercourse — and breaking through sexual stereotypes and myths," writes The New York Times.

Her message also touches on issues such as homophobia, alcohol and drug use and acquaintance rape.

Landolphi presents 130 "Hot, Sexy and Safer" performances per year. She has been so well received on college campuses that the National Association of Campus Activities nominated her for the Lecturer of the Year in 1991 and 1992 and the Harry Chapin Humanitarian Award, also in 1992.

Involved in safe-sex education since 1982, Landolphi was master of ceremonies and spokesperson in 1991 for the First National Children with HIV/AIDS Day in Washington, D.C. She has hosted and been a guest on several television programs, including the "Jenny Jones Show"; Lifetime TV's "Attitudes"; the NBC teen talk show "Rap-Around"; and the Group W Television special "Parents' Survival Kit."

Landolphi graduated from Middlebury College with a degree in theater and dance. After a career in regional theater and television productions in the Boston area, she started a video production business that earned her national awards as a producer and director. From 1982 to 1988, she volunteered at a struggling AIDS organization in Boston, which became the foundation for "Hot, Sexy and Safer." It began as a program for high schools and colleges and has grown to be "entertainment with a message" for all groups of people.

The lecture is co-sponsored by the Assembly Series and Student Union. For more information call 935-4620.



Hedda Gabler (played by junior Chelle Parkins) is amused by Eilert Lovborg's outburst. Lovborg (played by senior Peter Sarsgard), a professional rival of Hedda's husband, is brought down, in part, by her manipulations.

Story of one woman's struggle performed in Drama Studio

Henrik Ibsen's "Hedda Gabler," a dramatic story about a woman caught in an unforgiving society, will be performed at 8 p.m. Feb. 19, 20, 26 and 27 and at 7 p.m. Feb. 21 and at 2 p.m. Feb. 28 in the Drama Studio, Room 208 Mallinckrodt Center. The performance is presented by the Performing Arts Department.

The play is the story of Hedda Gabler, an extremely well-educated member of the elite class who, through a series of unnamed circumstances, is forced to marry beneath herself. Her marriage to George Tesman, a professor and member of the middle class, stifles her economically, socially and emotionally.

The role of Hedda is one of the most coveted female roles in history, says Annamaria Pileggi, the director of the production and artist in residence in the Performing Arts Department. "In some senses, she's one of the first feminists," says Pileggi. "Hedda is a woman who wants to live in a man's world. She wants to be part of the power and freedom that men of that time enjoy."

The only way she can exert that power is in manipulative, covert ways, says Pileggi.

The play ends in Hedda's self destruction, which Pileggi says will "be very spectacular and riveting."

The Washington University production also is using a very recent translation by British writer Christopher Hampton. This translation premiered in a 1989 production at the Olivier Theatre in London. Older translations can be stilted, says Pileggi, but this one is very current.

Junior Chelle Parkins will play Hedda Gabler. Other characters include senior Mik Fisher as George Tesman, sophomore David Baecker as Judge Brack, senior Sara Locker as Thea Elvsted, senior Peter Sarsgard as Eilert Lovborg, junior Jennifer Sohn as Berte, and Georgia Binnington as Aunt Julia. Binnington is an assistant director of admissions for fine arts and performing arts.

Ibsen, the Norwegian poet and playwright, wrote many other plays, many of which examined social conventions of his

time. In addition to "Hedda Gabler," some of his best known plays are "A Doll's House," "An Enemy of the People" and "When We Dead Awaken."

Pileggi, who has been at the University since 1991, teaches acting and movement for the actor. She served as movement specialist for several University productions, including "As You Like It" and "Tartuffe." Pileggi, who received her master's degree in acting from Brandeis University in 1988, made her St. Louis directing debut last fall with the premiere production of Joan Lipkin's "Small Domestic Acts."

Tickets are \$7, with discounts for senior citizens, students, faculty and staff. For more information, call 935-6543.

Peter Steinfels to keynote conference — from page 1

begin at 9 a.m. both days. Four commentators will present responses to the speakers' statements. The respondents are: Ghulam-Haider Aasi, associate professor and chair of Islamics and the history of religions at the American Islamic College in Chicago; Rabbi Everett Gendler, an instructor in philosophy and religious studies at Phillips Academy in Andover, Mass.; John Langan, Rose Kennedy Professor of Christian Ethics at Georgetown University's Kennedy Institute for Ethics; and Steinfels. At 11 a.m. and 3:30 p.m. Feb. 16, the panelists will answer questions from the audience.

"Last year, we examined the function of waging war to obtain peace," said J. Patout Burns, Ph.D., the University's Thomas and Alberta White Professor of Christian Thought. "But there are some religious traditions, specifically forms of Christianity, which assert that peace cannot be obtained by warfare, but only through non-violent behavior. This year we have decided to look at how this position developed within Christianity and to examine parallel views in Judaism and Islam. The early centuries of these latter traditions, unlike those of Christianity, included responsibility for state security and thus, for warfare."

Steinfels, the keynote speaker, received a doctorate in European history from Columbia University. He received the 1988

Author Richard Wright's life, work in 1950s topic of symposium

Author Richard Wright's life and work in the 1950s will be the topic of a symposium to be held from 1 to 4 p.m. Feb. 20 in the Women's Building Lounge. The symposium, titled "Richard Wright and the 1950s," is free and open to the public.

In connection with the symposium, the movie "Native Son," based on Wright's 1940 novel of the same name and starring Oprah Winfrey, will be shown at 7 p.m. Tuesday, Feb. 16, in Room 149 McMillan Hall. Admission is free.

Born in Mississippi in 1908, Wright, whose father was a sharecropper, "was the first African-American novelist to enjoy the national and international recognition usually reserved for white writers," says Lynn Weiss, Ph.D., visiting assistant professor of English and African and Afro-American studies at Washington University. Wright died in Paris in 1960. His novel *Native Son* and his autobiography *Black Boy* (1945) are landmarks in Afro-American literature and in American literary history, added Weiss, who is co-

organizer of the symposium with Gerald Early, Ph.D., chair of the African and Afro-American Studies Program and professor of English.

Among the symposium panelists will be Julia Wright, Richard Wright's daughter, who will discuss the final decade of her father's life. A resident of Paris, France, she is working on a memoir of her father's life. In addition, Ollie Harrington, one of the first African-Americans to create a syndicated cartoon character, will share his perspective on Wright's final years.

Harrington created the Bootsie syndicated cartoon character in 1933. He moved from Harlem to Paris in 1951 and became one of Wright's closest friends. Since 1961, Harrington has lived in Berlin, Germany.

Also serving as panelists will be Early, Amritjit Singh, professor of English at Rhode Island College, and Weiss.

The symposium is sponsored by the African and Afro-American Studies Program and the American Culture Studies Institute at Washington University. For more information, call 935-5690.

Finding could mean savings for growers — from page 1

and structure of plants will be different during stress, so we've been interested in looking for genes being turned on or off during stress."

Each year in the United States alone, roughly 40 percent of crop loss is due to drought. The highest amount of insurance payment in a single year for total crop losses has been \$385 billion. Thus, drought in a severe year could cost up to \$174 billion.

"Drought is by far the leading stress in agriculture worldwide," says John Boyer, Ph.D., DuPont Professor of Marine Plant Biochemistry and Biophysics at the University of Delaware and a member of the National Academy of Sciences. "Ho's find is very important and very exciting. This is one of the rare cases where a specific protein has been found that's vital to the plant dehydration process. His work gives hope of someday seeing plants expressing LEA genes at times when they now cannot express them. Dr. Ho is right in the front of LEA gene research."

The LEA gene Ho and his colleagues isolated and genetically engineered is expressed during desiccation, a final stage of seed development when the seed is undergoing a drying process. At this time, many proteins are produced to ensure that the plant does not wilt and die. Ho found, through computer modeling, that one of the LEA proteins had a unique structure — cylindrical, with amino acid subunits that were hydrophobic (no affinity for water) on one side and hydrophilic (with a strong affinity for water) on the other. Intrigued by the structure, he decided to insert the protein

into a tobacco plant to study the protein's visible function — what effect it might have on height, flowering, structure — and he was amazed at the results.

"The surprise is once we put the barley gene into the tobacco plant, we got a transgenic plant that was a little less than four feet tall compared with the control which was over six feet tall at seven weeks," says Ho. "Also, the transgenic plant was flowering already, and its leaves were smaller and stems were shorter, despite the early flowering. Later, we did other tests to see if the gene conferred drought resistance."

With the assistance of two German exchange students, Christine Bockel and Claudia Obermaier, Ho compared transgenic plants with younger control plants so that both kinds of plants would be approximately the same height. They watered the plants for many days, then stopped watering. After several days, the control plants wilted severely, but the transgenic plants showed only mild wilting, evidence that the LEA protein was protecting the plants.

Ho also observed the different plants at the same age and noted that, in parallel development, the controls have more vegetation and consume much more water than the transgenic plants. The transgenic plants had a much more highly developed vascular system — a plant's plumbing system — than the control plants with their typically soft leaves.

Key to success

Ho used a standard genetic engineering technique to insert the LEA gene into tobacco plants. The technique, the *agrobacterium tumefaciens*-mediated process, was pioneered in the early 1980s by Mary Dell Chilton, Ph.D., a former Washington University professor of biology. When inserted into the tobacco plants, a part of the bacterial DNA serves as a vector carrying the LEA gene into the plant tissues. The key to Ho's success was his manipulation of a piece of DNA called the promoter. A regulator unit of the LEA gene, the promoter is not expressed but it dictates when and where the coding region of the gene should be expressed. Ho used a promoter that continually forces expression of the LEA gene in all the tobacco plant tissues. In a regular barley plant, for instance, the promoter only responds under stress, signaling the gene to be expressed then and only then. But Ho's transgenic plants respond to stress all the time.

"We have a tall order in front of us, checking out all the possibilities with different plants and finding ways to engineer the correct promoter," says Ho. "But these are all exciting challenges. Think what a lodging-resistant, drought-resistant barley or wheat plant would mean to growers who irrigate. They'd save a bundle."

"There are powerful techniques in modern genetics, but there is nothing available that will allow scientists to alter dozens of genes to get the same effect we've gotten. It would be terribly time-consuming, laborious and boring as well. We've shown that coordinating these different traits is quite doable with just one gene." — Tony Fitzpatrick

For The Record

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

Of note

Thomas G. Cole, Ph.D., research associate professor of medicine and director of the Core Laboratory of the Lipid Research Center, has been elected chair-elect of the lipids and lipoproteins division of the American Association for Clinical Chemistry Inc. ...

John A. Cooper, M.D., assistant professor of cell biology and physiology, received a \$133,816 grant from the National Institute of General Medical Sciences for a research project titled "Actin Cytoskeleton of Yeast." ...

Frank K. Flinn, Ph.D., adjunct professor of religious studies, received Mortar Board's Teacher of the Month award for January. Mortar Board presents the award, based on student recommendations, to recognize excellence and enthusiasm in teaching. ...

"Refraction," a video by **Van McElwee**, lecturer in performing arts, was shown at Videonale, a video festival in Bonn, Germany. ...

Keith M. Rich, M.D., assistant professor of anatomy and neurobiology and associate professor of neurology and neurological surgery, received a \$146,632 grant from the National Institute of Neurological Disorders and Stroke for a research project on "Pharmacologic Prevention of Neuronal Death After Injury." ...

Felicia L. Shelby, a junior majoring in computer sciences, was appointed a co-

chair of the National Orientation Directors Association's (NODA) Student Caucus. The caucus addresses the concerns of students and makes recommendations to the NODA board of directors. As part of her responsibility, Shelby also will serve as the caucus representative to the board.

Speaking of

During the First Bristol-Myers Squibb Symposium on Infectious Disease Research held in Monterey, Calif., **William E. Goldman**, Ph.D., associate professor of molecular microbiology, gave a talk on "The Broadening Spectrum of Toxin-Target Cell Interactions." In addition, **Staffan J. Normark**, M.D., Ph.D., professor and head of molecular microbiology, spoke on "Bacterial Adhesion as a Mechanism for Cell Tissue and Host Species Tropism." The symposium, hosted by the Stanford University School of Medicine, was titled "The Cell and Molecular Biology of Bacterial-Host Cell Interactions." ...

During the Association of American Medical Colleges Conference on "The Role of Class, Race and Ethnicity in Health Services Research," **Grace Schwane Poertner**, Ph.D., health services researcher, gave a poster presentation titled "Birthweight Distributions and Survival Differences by Infant Race." The conference was held in Leesburg, Va. ...

Murray L. Weidenbaum, Ph.D., Edward Mallinckrodt Distinguished University Professor and director of the Center for the Study of American Business, gave a talk titled "An Economist Looks at the Emerg-

ing Military-Industry Relationship" at the Air War College in Montgomery, Ala.

On assignment

Jeffrey F. Moley, M.D., assistant professor of surgery, was a Curts Visiting Professor at the Dartmouth-Hitchcock Medical Center in Lebanon, N.H. As part of the professorship he spoke on medullary thyroid cancer and MEN type 2 syndrome during the center's surgical grand rounds.

To press

Gerald Early, Ph.D., chair of African and Afro-American studies and professor of English, edited a book titled *Speech and Power: The African-American Essay and its Cultural Content From Polemics to Pulpit*.

The Ecco Press published volume one of the book. ...

Carter Revard, Ph.D., professor of English, wrote an essay titled "How Columbus Fell From the Sky and Lighted Up Two Continents," which is featured in a book titled *Columbus and Beyond: Views From Native Americans*. The Southwest Parks and Monuments Association published the book.

Guidelines for submitting copy:

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

Therese J. Dent named assistant dean for field education at social work school

Therese J. Dent, Ph.D., has been promoted to assistant dean for field education at the George Warren Brown School of Social Work, Dean Shanti K. Khinduka, Ph.D., has announced. Dent previously served as the school's director of field education, a position she held for four years.

As assistant dean, Dent oversees the implementation and evaluation of field education for the Master of Social Work Program. In addition, she trains and monitors field faculty and implements the school's Corporate Intern Program.

Khinduka said Dent's promotion was in recognition of her outstanding accomplishment as director of field education, as well as a sign of the increased importance of



Therese J. Dent

field education in the school's Master of Social Work Program.

"Dr. Dent is determined to make the George Warren Brown field education program the most educationally sound and effective practicum

program in social work education. The faculty and I fully share her vision and are eager to work with her to achieve this goal," said Khinduka.

MBA students to attend conference in Germany

Six graduate students from the Olin School of Business have won scholarships to attend the fourth German Business Conference in Cologne, Germany, on March 3-4.

The conference, sponsored by German business and student groups, enables students, faculty and executives from around the world to explore an important issue facing business and education. With six students attending, the Olin School will have the largest representation from the United States.

"Human Resources — Success Through Human-Oriented Leadership" is the focus of the conference, which will include a variety of presentations, panel discussions and open forums.

Conference planners selected the following Olin students for scholarships: Retno T. Andari of Jakarta, Indonesia; Andrea L. Blumberg of Los Angeles, Calif.; Askar R. Elemesov of the former Soviet Union Republic of Kazakhstan; Jometric A. McIntyre of St. Louis, Mo.; Yi-An Wang of Taiwan; and Kent A. Weston of Evanston, Ill.

To apply for the scholarships, students submitted essays on issues in human resources management. More than a dozen Olin students entered the essay contest and competed with students worldwide for 400 scholarships.

To defray the cost of airfare, lodging, meals and other conference expenses, the scholarship winners pay a nominal fee

based on their country of current residence. Olin students and other scholarship recipients from the United States will pay a fee of about \$185.

Architects honor Dean Michaelides

The St. Louis chapter of the American Institute of Architects has given a Presidential Citation to Constantine (Dinos) E. Michaelides, FAIA, dean of the School of Architecture.

Michaelides, who was elected a fellow of the institute in 1983, was honored as an "educator, champion of design excellence and advocate for international cooperation and exchange," according to the citation. As dean, he has been a "faithful steward of the dreams and achievements that are the legacy of the most public of the arts, while at the same time, an eloquent source of inspiration, daring his students and faculty to explore new realms in which theory and practice are the handmaids of delight."

Michaelides came to Washington University in 1960 as assistant professor of architecture and was appointed associate professor in 1964. He became professor and associate dean in 1969. In 1973 Michaelides was appointed dean of the School of Architecture. He will retire July 1.



Robert G. Kranz, Ph.D., assistant professor of biology, examines an anaerobic chamber used to grow the *Rhodobacter capsulatus* bacteria. Strains of the bacteria produce high amounts of polyester compounds, which could be used as biodegradable components of disposable cartons.

Kranz receives grant to study polyester-producing bacterium

Robert G. Kranz, Ph.D., assistant professor of biology, is a co-recipient of a grant from the Midwest Plant Biotechnology Consortium in West Lafayette, Ind. The grant enables Kranz to research a polyester-producing bacterium with the potential of manufacturing biodegradable polyesters in its cells.

Kranz's co-investigator is Michael Madigan, Ph.D., professor of microbiology at Southern Illinois University in Carbondale.

The grant comes from the 1992 Energy From Biomass Competition sponsored by the consortium, which awarded \$1.2 million in matching funds to 15 research teams at nine Midwestern universities.

"The consortium's biomass competition supports biotechnology research that works with plant materials in an effort to create new ways of providing energy and products that are environmentally efficient," said Dorin Schumacher, Ph.D., executive director of the consortium. "Products derived from plants, such as plastics, ethanol and butanol, can lessen U.S. reliance on petrochemicals and other non-renewable energy sources."

Kranz has done extensive molecular research with the photosynthetic microorganism, *Rhodobacter capsulatus*, which, under anaerobic (without oxygen) conditions, produces high amounts of polyester-

storage compounds using inexpensive food sources. The polyesters produced in the bacteria have similar physical properties to the materials used in beverage and other cartons. However, of the 12 products currently marketed as "biodegradable plastics," only one, composed of polyesters synthesized by another microorganism, is truly biodegradable.

Kranz and Madigan intend to analyze the amounts and composition of various isolated strains of *Rhodobacter capsulatus*. The genes involved in polyester biosynthesis will be cloned and strains that overproduce these polyesters will be characterized.

Their research could result in cleaner plastics — both in the production and disposal processes.

The Midwest Plant Biotech Consortium, organized in 1985, brings together university researchers and U.S. corporations to speed the process of technology transfer — the transference of commercially viable products and processes from the research laboratory to the marketplace. Consortium members include Washington University and 17 other universities and research laboratories; 34 commodity, food, energy and agricultural products companies; and two trade associations representing more than 100 companies.

Opportunities & personnel news

Hilltop Campus

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

Rare Books Catalog Librarian

930056. *Olin Library*. Requirements: MLS degree from ALA-accredited library school; master's degree in the humanities desirable; academic library or equivalent cataloging training or experience with AACR2 and LC classification; rare books cataloging training or experience; archival and manuscript cataloging experience using AMC format; ability to work with non-English languages and non-Roman alphabets; working knowledge of OCLC and NOTIS or other automated systems; reference training or user-service experience; supervisory experience; knowledge of preservation procedures; knowledge of national and international trends in bibliographic description desirable. Resume and three letters of recommendation required.

Department Secretary, Part-time

930073. *Center for Computer Systems Design*. Requirements: Some college; typing 50 wpm with accuracy. Duties: answer telephone; greet callers; maintain calendars, schedules and files; make travel arrangements; type routine correspondence and classwork; assist in fiscal activities of center — coordinate journal search via Washington University School of Medicine Library, assist in annual report preparation, assist in coordination of research progress reviews, coordinate center technical report distribution; assist in departmental accounting procedures; maintain office supplies. Clerical tests and three letters of recommendation required.

Programmer

930091. *Olin Library*. Requirements: Bachelor's degree in computer science; demonstrated experience in coding and debugging C programs; working knowledge of the UNIX environment including TCP/IP networking; knowledge of object-oriented programming technologies such as C++; knowledge of PC programming environments (DOS and WINDOWS); experience implementing client-server applications. Resume and three letters of recommendation required.

Reference Librarian, Part-time

930128. *School of Business*. Requirements: Master's degree. Responsible for all operations in the library during the weekend; implement and interpret policy. Working hours each semester: noon to 6 p.m. Saturday, 3:15 p.m. to 7:15 p.m. one weekday. Resume and three letters of recommendation required.

Assistant Receptionist/Clerical Assistant

930137. *Office of Financial Aid*. Requirements: One year of college-level study; typing 40 wpm with accuracy; ability to work industriously and accurately in a well-organized manner; ability to maintain efficiency and composure under pressure, especially from multiple phone calls and frequent student requests; ability to work with a friendly, courteous manner; ability to maintain accurate and orderly records; ability to change or work on two or more projects simultaneously. Clerical tests and three letters of recommendation required.

Project Manager

930143. *Facilities Planning and Management*. Requirements: College degree in engineering/construction/architecture required; minimum five years project

management experience in both design and construction; ability to read and interpret plans and specifications; capable of working with and motivating design professionals and contractors; ability to organize time and priorities to be most productive; self-motivated, responsible and mature individual; good communication skills a necessity; must possess a good working knowledge of the design and construction industry to assess quality of the work being performed; ability to make judgments on acceptability, proper means and methods of design and construction. Resume and three letters of recommendation required.

Stockroom Manager

930144. *Biology*. Requirements: Ability to use FIS programs; previous stockroom/receiving experience highly desirable; willingness to handle hazardous chemicals and radioactive materials; ability to do heavy lifting and moving heavy objects; able to exercise judgment and work with minimal supervision; typing with accuracy. Clerical tests and three letters of recommendation required.

Senior Technician

930145. *Biology*. Requirements: Bachelor's degree; safe handling of biohazardous materials. Duties: Conduct research on Mycobacteria. Deadline Feb. 15. Resume and three letters of recommendation required.

Lab Aide

930146. *Biology*. Requirements: High school diploma; safe handling of biohazardous waste. Duties: glassware pickup and processing; housekeeping; media preparation; run errands for department. Application and three letters of recommendation required.

Financial Analyst

930148. *Arts and Sciences*. Requirements: Bachelor's degree. Assist in preparation, analysis and review of yearly operating budget; assist with year-end closing and preparing appropriate year-end analysis; do special research projects within the accounting and budgetary area; compile the appropriate data, prepare reports and analyses; prepare monthly/quarterly/semester reports on contingency budgets, tuition allocation, other expenses and salary; assist departmental staff with budgetary and accounting questions; process departmental budget adjustments and review check requests; demonstrate working knowledge of Arts and Sciences procedures and policies; provide assistance to the director in the proper implementation of school procedures. Resume and three letters of recommendation required.

Director, Sponsored Projects Services

Research Office. Requirements: Bachelor's degree. Supervise and provide services in the area of federal and non-profit research funding to the University. Experience needed in principles of management of public funds by universities, government contracting practices, government regulations affecting research universities. Supervision of personnel to grade 10 required; interact and problem solve with faculty, administrators, agency personnel; monitor and analyze public policy; develop management systems to promote smooth function between different university departments; supervisory and position-specific experience required. Deadline March 15. Send resume and contact information for three references to: Associate Vice Chancellor for Research, Washington University, Campus Box 8013, 724 S. Euclid Ave., St. Louis, Mo. 63110.

Director

Research Office. Requirements: Master's degree, doctorate preferred. Direct a new

program to generate corporate support for medical research; develop a networking capability through personal interaction with medical school faculty and corporate R7D managers; interact with Research Office staff involved with technology transfer (patents and licensing). Graduate-level training in science or business required; up-to-date technical knowledge of several of the following areas required: biotechnology, pharmacology, medical devices and medical imaging; ability to extrapolate from scientific interest to commercial application required; strong synthetic and analytical skill and presentation abilities needed. Deadline March 15. Applicants should send a CV and cover letter containing names, titles, addresses and phone numbers of three references to: Susan E. Cullen, Ph.D., Associate Vice Chancellor for Research, Washington University, Campus Box 8013, 724 S. Euclid Ave., St. Louis, Mo. 63110.

Medical Campus

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

Medical Research Technician

930527-R. *Neurology*. Requirements: Associate's degree, bachelor's degree preferred; must be able to prepare plasmid DNA, use restriction enzymes and generate riboprobes from CDNS's. Prefer individual who is familiar with in situ hybridization, histochemistry and autoradiography; good depth perception a must.

Library Associate, Part-time

930531. *Medical Library*. Schedule: Some Saturday, Sunday and weekday evenings. Requirements: Bachelor's degree, prefer master's degree; must have good written and oral communication skills; library research experience is essential. Applicant must be flexible and have supervisory experience; should have experience using PC or Macintosh; able to work well with the public.

Medical Transcriptionist

930534. *Neurology*. Requirements: High school graduate/equivalent, one to two years experience in a medical setting; typing 60 wpm and knowledge of medical terminology. Must be familiar with

word processing, preferably WordPerfect.

Nurse Practitioner

930537. *Neurology*. Requirements: Bachelor's degree, master's degree preferred; must have a minimum of three years nursing experience with at least one year of pediatric nursing. Prefer experience with neurological condition; must be efficient and well-organized to meet the demands of a busy practice.

Medical Secretary II

930542-R. *Ophthalmology*. Requirements: High school graduate/ equivalent, some college preferred; minimum two years secretarial experience. Must have good communication and organizational skills; typing 60 wpm and a thorough knowledge of medical terminology.

Library Assistant IV

930548-R. *Medical Library*. Requirements: High school graduate/ equivalent, some college preferred; minimum one year library experience. Public contact experience and good communications skills highly desirable; typing 35 wpm.

Medical Transcriptionist

930553-R. *Psychiatry*. Requirements: High school graduate/equivalent; some business or technical school preferred; typing speed 70 wpm; thorough knowledge of medical terminology. Must have word-processing experience, preferably WordPerfect.

Medical Research Technologist

930554-R. *Genetics*. Requirements: Bachelor's degree with experience in DNA sequencing. Prefer individual with experience in recombinant DNA techniques; micro computer experience a must; capable of using initiative and independent judgment. Some handling of radioactive materials.

Med Lab Tech I, Full-time

930555-R. *Pediatrics*. Schedule: Includes rotating weekends and holidays. Requirements: Associate's degree with one year microbiology experience preferred; must have MLT(ASCP) or HEW certification or eligibility. Will perform routine bacteriology set-up procedures for processing incoming cultures and stain, read, interpret and report gram stains.

Clinical Lab Tech I

930557-R. *Cardiology*. Requirements: High school graduate/ equivalent, bachelor's degree preferred; desire experience in general laboratory techniques. Will perform assays of creative kinase isoenzymes and coagulation proteins in plasma samples from patients enrolled in several multicenter drug trials.

Students to meet leading British actors — from page 1

forced to approximate the means Shakespeare used in his own productions some 400 years ago.

The course will offer classes in acting, directing, voice, movement, scene study and textual interpretation. A public performance of scenes prepared by the students during the course will be presented on the replica Globe Theatre stage. Students also will attend six productions at the Royal Shakespeare, Royal National and other West End and fringe theatres in London. A special three-day excursion to Stratford-upon-Avon to see two performances by the Royal Shakespeare Company (RSC) also is included in the course.

In addition, master classes, workshops and seminars will be given by some of Britain's leading theatre professionals, including actors Jane Lapotaire and Julian Glover, as well as Andrew Wade, head of

voice with the RSC. Ann Marie Costa, coordinator of acting and directing in Washington University's Performing Arts Department, also will lend her expertise by teaching in the program.

While the workshop will concentrate on Shakespeare, students also will be able to explore the contemporary British theatre by meeting with actors and directors and by attending plays.

Students will receive six units of Washington University credit for the four-week course, which is also transferable elsewhere. Classes will be held from 10 a.m. to 4 p.m. weekdays. The entire program, including theatre tickets to six productions, the Stratford trip and six units of credit, will cost \$2,700. This price does not include airfare.

For more information, call the Performing Arts Department at 935-5858.