Washington University Record, February 27, 1997

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Imaging technology helps make a more exact prosthetic fit

A bout 60,000 lower-limb amputations are performed each year in the United States. For the patient, the fit of a prosthetic device can define quality of life. But traditional methods of fitting such devices frequently fail to provide the best possible fit. The same artificial leg that provides mobility and freedom can become the source of profound discomfort. For some, an ill-fitting device leads to painful pressure sores and troublesome, recurrent infections.

However, modern imaging technology holds promise for solving these problems. School of Medicine researchers are applying innovative technologies to rehabilitation science and are using sophisticated imaging machines to enable comprehensive evaluations of prosthetic fit. In an article published in a recent issue of Radiology, a team of scientists reported the study.

Traditional socket fitting for a lower-extremity prosthesis begins with a plaster-cast replication of the residual limb, followed by a sequence of manual modifications (called rectification) to the artificial limb. The outcome is largely dependent on the skill and craftsmanship of the prosthetist. And, Vannier said, there is a wide margin of error.

The standard plaster-casting technique provides only a rigid, static copy of the residual limb in one set position. With only a rock-hard cast, it is impossible to address the shape changes of bone and soft tissue that occur while an amputee walks with a prosthesis. Just as the skin and soft tissue on the bottom of a foot is molded and shaped in a snug shoe, the shape of the residual limb changes while the patient is wearing a prosthetic device. As a patient walks, pressure points on the limb vary with the body’s shifting weight.

A technique called spiral computed tomography (CT) scanning allows researchers to study exact shape changes and correlate them with parameters for a precise prosthetic fit.

“For the first time ever, we measured shape change through imaging — without having to go through plaster casting,” Vannier said. “We had a much tighter margin of error in evaluating the fit of the prosthetic device. And we found that the shape changes are much larger than the margin of error of the old technique. That really establishes the credibility of using imaging for this type of process.”

Spiral CT scanning is a quick procedure that provides a 3-D “X-ray” view of the residual limb while the patient is wearing a prosthetic device. In addition, soft tissues are displayed clearly on a cross-sectional image. The transparent view of the bone and soft tissue in a patient’s stump is unprecedented, Vannier said, and allows for the fit of a prosthetic device to be defined accurately.

“Researchers might have answered a question that has been bothering researchers for years,” said Zhao, who has published the article. “Could we really make a more accurate prosthetic fit? And we think we can.”

Researchers studying why some students stay in high school

E veryone agrees that the high school dropout rate — especially among African-American teenagers — is alarming. Annually, in large cities and in inner-city schools, it ranges from 40 percent to 50 percent.

“What if some students make it?” asked Michael J. Strube, Ph.D., professor of psychology in Arts and Sciences. “If we can predict who will stay in school, we may be able to design interventions to keep more kids there.”

Larry E. Davis, Ph.D., a professor in the George Warren Brown School of Social Work and in the Department of Psychology, is in the midst of a study to identify these predictive factors. In 1994, they received a $211,000 grant from the Maternal and Child Health Bureau of the U.S. Department of Health and Human Services to track a group of freshmen through their sophomore year at Normandy Senior High School in north St. Louis County. Recently, they received an additional $283,000 in continuation funds to follow these same students through 1999, the year after they are scheduled to graduate.

For both professors, the study combines a long-standing intellectual interest in group processes and applied decision-making with a personal interest in doing something that might have a societal impact.

“I wanted to work on increasing positive behaviors among African-American youths,” Davis said.

Each fall, Davis and Strube survey the Normandy students on their attitudes about the pressures they face in school, the social pressures they face, and the barriers they perceive to be in the way. Next, they analyze the results and track the students to see if any drop out. Their work has been yielding surprising results.

Seismologist creates picture of ‘heart’ of large Japanese earthquake

A Washington University seismologist has identified the structure of the hypocenter of a January 1995 earthquake in Kobe, Japan, and has discovered that the earthquake’s hypocenter is the first time a scientist in earth and planetary sciences, used his own methods to identify the structure of the hypocenter of a January 1995 earthquake in Kobe, Japan, and has discovered that the earthquake’s hypocenter is the first time a scientist in earth and planetary sciences, used his own methods to identify the structure of the hypocenter of a January 1995 earthquake in Kobe, Japan, and has discovered that.

The earthquake, measured at 7.2 on the Richter scale, was the most destructive in Japan in more than 70 years.

“Researchers’ first study to identify the structure of the hypocenter of a January 1995 earthquake in Kobe, Japan, and has discovered that the earthquake’s hypocenter is the first time a scientist in earth and planetary sciences, used his own methods to identify the structure of the hypocenter of a January 1995 earthquake in Kobe, Japan, and has discovered that the earthquake’s hypocenter is the first time a scientist in earth and planetary sciences, used his own methods to identify the structure of the hypocenter of a January 1995 earthquake in Kobe, Japan, and has discovered that the earthquake’s hypocenter is the first time a scientist in earth and planetary sciences, used his own methods to identify the structure of the hypocenter of a January 1995 earthquake in Kobe, Japan, and has discovered that.

Their work has been yielding surprising results.

In this issue...

Intoxicating effects 

Researchers might have answered an important question: Why does alcohol make people drunk?

Perfect harmony 

Hugh Macdonald, Ph.D., masterfully balances the scholarship and performance of music

Daredevil dancers 

The gravity-defying dancers of Streb/Ringside will bounce into Edison Theatre next month

WASHINGTON UNIVERSITY IN ST. LOUIS
Vol. 21 No. 22 Feb. 27, 1997
Researchers study alcohol’s intoxicating effects

School of Medicine researchers might have answered a question that has lingered since humans first discovered one cheap way to make alcohol: Does alcohol make people drunk? The researchers discovered that a compound produced by alcohol-tolerant cells potentially can inhibit the release of neurotransmitters, which is what happens in real-life brains after too much alcohol is consumed. If lowdown in neurotransmitter release could lead to slurred speech, slow reflexes and a loss of inhibitions.

“I’m hopeful that we can now figure out the thousand-year-old mystery,” said Richard W. Gross, M.D., Ph.D., professor of medicine and of molecular biology and pharmacology. “Despite the structural simplicity of ethanol, nobody understands the biochemical mechanisms that are responsible for its neurologic effects.”

In a study published last December in the Journal of Biological Chemistry, Gross and Rose Gubitosi-Klug, an M.D./Ph.D. student, linked potentially intoxicating changes in brain chemistry to a group of compounds called fatty acid ethyl esters. These compounds, which are lipid molecules that cells manufacture by combining ethanol and fatty acids, apparently speed up the release of potassium ions from brain cells. In the brain, an increased flow of potassium would inhibit the release of neurotransmitters.

Gubitosi-Klug said the study might explain a paradox that has frustrated researchers for years, said Gross, who also is a professor of chemistry in Arts and Sciences.

“Many laboratory ages 60 to 75 will ride stationary bikes or bicycle rides, can help lower high blood pressure as a natural consequence of aging. Anyone interested in volunteering should call (314) 747-2785. for alcohol addiction, Gubitosi-Klug said.

The research springs from the work of Louise Lange, M.D., Ph.D., a former Washington University researcher now working for a biotechnology company in San Francisco. Lange discovered in the 1980s that fatty acid ethyl esters accumulate in the pancreas, heart and brain of heavy drinkers. Lange speculated that fatty acid ethyl esters might be responsible for alcohol-related damage to these organs.

“By the time diabetes produces symptoms, the disease may have been present for five or more years. During this time, eye, kidney and nerve damage may have begun,” said Julio V. Santiago, M.D., professor of pediatrics and of medicine and director of the School of Medicine’s Diabetes Research and Training Center.

Researchers will plan to screen 3,000 local patients for the study. To qualify, individuals must be at least 25 years old and have at least one of the following risk factors: a family history of diabetes; overweight; a history of temporary mild diabetes during pregnancy; having delivered a baby weighing more than 9 pounds; or a history of mildly elevated blood sugar levels without a diagnosis of diabetes.

Volunteers will receive a blood test that measures glucose tolerance. If they qualify, subjects in the study will be followed for three to six years. Study participants will be randomly assigned to one of three groups: intensive lifestyle modifications focusing on exercise and weight loss; healthy lifestyle intervention and one of two medications that reduce resistance to insulin; or healthy lifestyle intervention and an inactive substance. Medical care and drugs related to the study are free.

“emphasis is on a personalized exercise and nutrition program supervised by experts,” Santiago said. For more information, call (314) 454-4111 or 1-800-454-7465.

Ali A. Ehsani, M.D., professor of medicine, has received a $1.4 million grant from the National Institute on Aging for research that suggests exercise may be a potent treatment for diabetes and related conditions. The grant supports a project to determine whether exercise can lower high blood pressure in elderly people.

In a study reported last October, 80 volunteers ages 60 to 75 will ride stationary bikes or bicycle rides, can help lower high blood pressure as a natural consequence of aging. Anyone interested in volunteering should call (314) 747-2785.

Ehsani’s findings are based on his work with the Diabetes Prevention Program, which is sponsored by the National Institutes of Health. It will enroll 4,000 overweight persons at high risk of diabetes and have at least one of the following conditions: a history of mildly elevated fasting blood glucose; a history of temporary mild diabetes during pregnancy; a history of mildly elevated blood pressure; or he family history of diabetes.

“By the time diabetes produces symptoms, the disease may have been present for five or more years. During this time, eye, kidney and nerve damage may have begun,” said Julio V. Santiago, M.D., professor of pediatrics and of medicine and director of the School of Medicine’s Diabetes Research and Training Center.

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Washington People

Musician blends scholarship, performance

With a look of determined concentration, Hugh Macdonald leaned over the piano keys and began a long, finger-stretching run up the keyboard. Pushing his fingers through a memorizing rush of notes, he dashed off the final chord, turned back his head and smiled modestly.

"How was that?" he asked his wife, Elizabeth, a well-known local cellist, during a rehearsal for a recital the two presented last month in Steinberg Hall Auditorium.

"It was a fanatical phase that many people go through," Macdonald said. "It's hard to explain how these things happen," Macdonald said. "Music is something to be done as much as to be thought about and studied." As a musicologist, Macdonald's contributions to the field are prolific. He has written three books and has been published extensively in academic journals, both in the United States and in Europe. His primary scholarly interest focuses on the music and life of Hector Berlioz; Macdonald is considered the world's leading authority on the French Romantic composer.

From engineering to music

As a teenager living in England, Macdonald became obsessed with the work of Berlioz. "It was a passionate interest in music performance with a deep intellectual curiosity about music scholarship," he says. "It requires historical knowledge to understand what the composer was hoping to achieve and a good deal of technical knowledge to know what to listen for, as well as an explanation of what it all signifies," Macdonald said.

Recent graduate Karin Di Bella said Macdonald conveys these points with enthusiasm. He is knowledgeable and excited about the material he teaches, she said.

"He presents it in a humane manner," Di Bella said. "He's not looking at the music as just a relic of history. He presents these composers as real, living, breathing human beings, which is not the case in all classes."

Macdonald's professional career, he said, still is much work to be done on Berlioz. One of Macdonald's long-term projects is serving as general editor for the new Berlioz Edition, a 26-volume collection of the composer's complete works, published by Bärenreiter-Verlag, a German publishing company. He started the project in 1980 and plans to complete it in the year 2000 — the bicentennial of Berlioz's birth. "I've been at it for 30 years, and it keeps me constantly busy," he said. Macdonald said of the ongoing research project. "But I don't just do that — it would be rather dreary in the end."

He has done considerable research on other composers and is well-known for his translations of German, French and Italian operas into English. Macdonald also regularly presents pre-concert talks before Saint Louis Symphony Orchestra programs at Powell Symphony Hall.

Bridges, typewriters and squash

Outside of music, Macdonald has a passion for bridges — a throwback to his early interest in engineering — and will drive miles out of his way to cross one. His former collection of rare, antique typewriters has been renamed as the subject of a British Broadcasting Corp. documentary.

He also is known for his prowess on the squash court, said John Stewart, head of the vocal program. "He's amazingly quick on his feet," Stewart said. "He has a vicious backhand — one would never believe." More importantly, Stewart praised Macdonald's ability to balance the interests of scholarship and performance.

"That to me is what's so wonderful about his chairmanship," Stewart said. "He combines professional experience in the academic side of things with being a very, very active performer. He really is sympathetic and understands performers' needs and interests."

As music department chair, Macdonald's main priorities are to attract the best students and promote top-notch teaching and research. He would like to increase some areas of scholarly activity and elevate the arts, literature and music to the highest levels.

Musician blends scholarship, performance

"We have a good faculty and a fine library," he said. "We've been at it for 30 years, and it keeps me constantly busy." Macdonald said of the ongoing research project. "But I don't just do that — it would be rather dreary in the end."

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"The culture is there," Macdonald said. "It is just a matter of making people aware of it and understanding that this is an essential part of a civilized life."
Exhibitions

"Abstract Expressionism: American Art in the 1950s and '60s." A collection of 200 works by masters of the "New York School." Through April 6. Gallery of Contemporary Arts, 149 S. Euclid Ave. Hours: Mon.-Wed. 10 a.m.-4:30 p.m.; Thurs. 10 a.m.-8 p.m.; Fri.-Sat. 10 a.m.-5 p.m.; Sun. 1-5 p.m. Free.

Films

All Filmboard movies cost $2 and are shown in Room 100 Brown Hall. For the 24-hour Filmboard hotline, call 935-5983.

Monday, March 10


Tuesday, March 11

6 p.m. Chinese Film Series. "Ju Dou." Room 210 South Ridgley Hall. 935-5156. 7 p.m. "Lawrence of Arabia." (Also March 12, same time.) Room 305 Bryan Hall. 935-6150.

Friday, March 14

7 and 9 p.m. Filmboard Feature Series. "The Hudsucker Proxy." (Also March 15, same times, and March 16 at 7 p.m.) Midnight, Filmboard Midnight Series. "Batman." (Also March 15, same time, and March 16 at 9:30 p.m.) Room 305 Bryan Hall. 935-6150.

Lectures

Thursday, Feb. 27

4:30 p.m. "A Genetic Analysis of Neural and Endocrine Peptides in Drotophila." Paul F. Taggart, assoc. prof. of anatomy and neurobiology. East Pavilion Auditorium (also March 14, 4:30 p.m.) and the Clinical Sciences Research Bldg. 362-3365.

Friday, March 6


Tuesday, March 10


Wednesday, March 12


8 p.m. School of Architecture's Monday Night Lecture Series. Zaha Hadid, the London-based architect and principal, Studied under the supervision of Hadid, will discuss her recent work, Stadthalle, Vienna. H. H. Corbett Auditorium. 935-6726.

Tuesday, March 11

9:45 a.m. Molecular microbiology/microbial proteomics seminar series. "Role and Mechanism of IL-1 Release in Inflammation." Elizabeth C. Barnhart, prof. of pathology, Argonne National Laboratory. Room 241 McMillen Lab. 935-6530.


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Darwinist Richard Dawkins to discuss evolution in Assembly Series lecture

Eminent Darwinist Richard Dawkins, Ph.D., will speak on "Is Evolution Progressive?" at 7:30 p.m. Monday, March 17, in Gasser Auditorium. This Assembly Series lecture is free and open to the public.

Dawkins is one of the foremost experts on evolutionary biology. He is the author of "The Selfish Gene," in which he argues that a living being's primary genetic drive is to replicate and propagate. In his book, "The Blind Watchmaker," he argues that "the self" exists as a free will and spiritual actuality, not as the products of Richard Dawkins.

In his most recent book, "River Out of Eden," Dawkins explains evolution as a flowing river of genes that meet, unite, and separate to form new species.

Music
day 7:10 p.m. Twenty-third annual Internal Medicine Review continues. (continued). The topic is gynecological. Steinberg Amphitheater. 1:21 W. Kingshighway Blvd. 362-4891.

Saturday, March 8

Saturday, March 14

Saturday, March 14
8 p.m. "The Rehearsal" by Thomas Benjamin and "The Impresario," sponsored by the Department of Music in Arts and Architecture; performance begins at 8 p.m. in Wunderly Hall. Call 935-4643 to register.

Friday, March 14
3:30-5 p.m. "New Approaches to the Management of Nasal Deformity," John B. Mulliken, professor of surgery, plastic and reconstructive surgery, will hold sessions at various locations. Call 935-4360.

Sponsorship symposium, to be held March 28-30, will feature 15 distinguished speakers. For more information, call 935-6543.

Saturday, March 14


Music department, art school join forces to present contemporary, classical operas

The Department of Music in Arts and Sciences, in conjunction with the School of Art, will present a double bill of contemporary and classical operas March 14, 15 and 16 in Bixby Hall's Bixby Gallery. On Saturday, March 14, the Washington University Opera performances begin with Thomas Benjamin's 20th-century real-life "The Rehearsal," which will be followed by Wolfgang Amadeus Mozart's 18th-century comedy "The Impresario" (Galesburg, Ill.).

Both works tell tales of the darker side of the opera business through the eyes of two sopranos—a fading diva and a young upstart—who compete for center stage and love. The set for both operas replicates New York City's elegant Algonquin Hotel in the late 1930s. Bixby Gallery will be transformed into a ballroom of the great hotel in its heyday, with audience members sitting either at tables or elsewhere in the gallery.

The operas, written nearly 200 years apart, work well together thematically and in how the story lines merge, said director Jolly Corker, voice instructor and head of the WU opera program. "There is a wonderful parallel between the two pieces. Both are about power and balance," she said. "It's a layered experience with many ironic twists."

Benjamin, director is John Stewart, head of the vocal program. The set is being designed by students in the art school's "Time Arts Class," taught by Alison Crocetta, lecturing in art.

April 6-8 p.m. "The Impresario." Hurst Lounge, 641 Nebel Hall. Call 935-4360 for tickets.

April 11-15 p.m. "The Rehearsal." Wunderly Hall. Call 935-4643 for tickets.

April 15-10 a.m. Twenty-fifth annual Internal Medicine Review (continued). The topic is gynecological. Steinberg Amphitheater. 1:21 W. Kingshighway Blvd. 362-4891.

Saturday, March 15

Saturday, March 15
11 a.m.-1:30 p.m. "Art workshop: "Early World."" Sponsored by the History of Science, Technology and Medicine Program; cost: $35. Room 104 Bixby Hall. Call 935-4643 to register.

Saturday, March 15
3:30-5 p.m. "Art workshop: "Printmaking."" Sponsored by the History of Science, Technology and Medicine Program; cost: $35. Room 104 Bixby Hall. Call 935-4643 to register.

Saturday, March 15
5:15-6:45 p.m. "Art workshop: "Creative Writing."" Sponsored by the History of Science, Technology and Medicine Program; cost: $35. Room 104 Bixby Hall. Call 935-4643 to register.

Saturday, March 15
7-10 p.m. "Art workshop: "Greeting Card."" Sponsored by the History of Science, Technology and Medicine Program; cost: $35. Room 104 Bixby Hall. Call 935-4643 to register.

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Architect Zaha Haddid to discuss her projects

Known for her colorful, exquisitely patterned and deconstructivist tendencies, award-winning architect Zaha Haddid will discuss her latest projects at 8 p.m. March 10 in Steinberg Hall Auditorium.

The lecture, which is free and open to the public, is part of the School of Architecture’s Monday Night Lecture Series. A reception will follow in Room 1202 Givens Hall.

Haddid is the architecture school’s Harris Armstrong Endowed Guest Lecturer. A principal at London’s Studio 9, the Iraqi-bom Haddid is renowned for her futuristic architectural paintings and drawings created during the production phase. Her aggressive designs are characterized by a sense of fragmentation and instability as she plays off the use of curving lines, planes and geometric forms.

“The description of her as a deconstructivist is more than a label applied to one outcome of pressures to classify any given architectural or artistic production,” said Omar Perez, a visiting assistant professor of architecture who worked with Haddid in 1993 on the design team for a Romanian constructivist exhibit at New York’s Solomon R. Guggenheim Museum. “Her work relies much more on an internal logic and is definitely the result of her artistic sense more than any concern with deconstructivist theory.”

Often centered around a unique space that might include walls, scaffolding, beams and a trampoline, a typical Streb/Ringside performance weaves the choreographer’s staccato-activated visual sense with split-second timing, gripping gymnastics and flying bodies.

Founded in 1985, Streb/Ringside has performed throughout the United States, Europe and Asia. Choreographing and company founder Elizabeth Streb doesn’t just test the boundaries of physical motion, she redefines them. From midafternoon suspensions to after-dark, own dives, Streb/Ringside’s “POP ACTION” captures the imagination and triggers the adrenalin.

Study asks what keeps students in school — from page 1

But they so far have found that the students’ sense of efficacy — their view of themselves as able to get things done — seems to be tied to the question of whether they will stay in school. “Self-esteem doesn’t seem to be the critical issue,” Strube said. “It’s whether they see themselves by and large, and do they feel they can do anything.”

However, another cue to dropping out does seem to exist, however. Black females often do better in school, and so have firmer intentions of staying in school and perceiving their environment as less dangerous than those faced with black males. The dropout rate seems to be higher among the males.

The school has found support from funding agencies, Davis and Strube said, because they do not use the usual “systematic approach” that the solution lies in the school or the community. “Both of us firmly believe that the unit of action here is the person,” the professor said. “We blame the community all you want, but you’re going to have to change the motives of an individual. So it’s very important to look at what that person believes.”

Their next grant proposal will seek funding to design interventions based on the findings from this study. A one-size-fits-all approach is not what they have tried, and what they have found to work best is an individualized, different intervention for each student based on personal attitudes and perceptions.

“We hope we can take the dropout rate — whatever it ends up being — and bring it down considerably,” Strube said. “Most intervention programs have been all that successful, and we hope we can do better.”

-- Candace O’Connor

Committee to review bookstore services

Edward S. Macias, Ph.D., executive vice chancellor and dean of Arts and Sciences, is chairing a committee that has been formed to review Washington University’s bookstore services.

Currently, the Campus Bookstore is owned and operated by the University. In 1990, a committee chaired by Burton Wheeler, Ph.D., now professor emeritus of English in Arts and Sciences, recommended continued campus ownership of the bookstore.

Subsequent changes in competition, pricing and costs in bookstore operations, however, have prompted a revisiting of the issue.

The committee’s charge is to determine what services are essential and appropriate and then look at the best options to meet those needs,” said Macias. The committee’s membership includes:• Lee Epstein, Ph.D., professor and chair of political science in Arts and Sciences;• J. Claude Evans, Ph.D., associate professor of philosophy in Arts and Sciences;• Joseph A. “Jody” O’Sullivan, Ph.D., associate professor of engineering;• Jeffrey C. Pike, associate professor and associate dean of the School of Arts and Sciences;• Tim Kunstler, a senior in the John M. Olin School of Business; and• Jennifer Bearman, a freshman in Arts and Sciences.

Campus Watch

March 14

Feb. 21

8:57 p.m. — A student reported that two backpacks containing personal items, credit cards and cash were stolen outside the racquetball courts in the Athletic Complex.

Feb. 22

4:37 a.m. — A student reported that two cue balls and a cue stick were stolen from the basement of a fraternity house.

Feb. 23

9:58 a.m. — A Marriott Management Services Corp. employee reported that a storage room door was removed in the Umfrathskeller.

University Police also responded to two reports of auto accidents; two reports of harassing telephone calls; and one report of a motorist violating traffic laws.

The following records were reported to the University Police Department from Feb. 17-22. Readers with information that could assist the investigation of these incidents are urged to call (314) 935-5555. This release is provided as a public service to promote safety awareness on campus.

Feb. 18

8:57 p.m. — A student reported that two backpacks containing personal items, credit cards and cash were stolen outside the racquetball courts in the Athletic Complex.

Feb. 19

12:02 a.m. — An officer on patrol discovered a broken window panel appeared to be kicked out of a main entrance door of Anheuser-Busch Hall. A student reported that work uniforms were stolen from Anheuser-Busch Hall.

Feb. 20

10:45 a.m. — A student reported that an identification card was stolen from Liggett Residence Hall and was used to charge $20 worth of food at the Bear’s Den in Wohl Student Center.

Feb. 21

6:21 a.m. — A student reported that a cellular telephone was stolen from the recreation gym in the Athletic Complex.

6:45 a.m. — A student reported that a backpack containing clothing was stolen outside the racquetball courts in the Athletic Complex.

Feb. 22

4:37 a.m. — A student reported that two cue balls and a cue stick were stolen from the basement of a fraternity house.

Feb. 23

9:58 a.m. — A Marriott Management Services Corp. employee reported that a storage room door was removed in the Umfrathskeller.

University Police also responded to two reports of auto accidents; two reports of harassing telephone calls; and one report of a motorist violating traffic laws.
For The Record contains news about a wide variety of faculty, staff and student scholarly and professional activities.

Of note

Paul M. Allen, Ph.D., the Robert L. Kroc Professor, has received a $1,495,342 five-year grant from the National Institute of Allergy and Infectious Diseases for a project titled "Presentation of Self-antigens and Tolerance..."

Debra L. Hair, chairperson, M.D., a research associate professor of medicine, has received a $1,956,757 four-year grant from the National Institute on Aging for a project titled "Altering Dietary Patterns...

A project titled "Possible Evolution of Technology Age of Exploration: Art and Science in the 1870s" at the Colorado School of Mines' Artist-Student and Scholar Series held Jan. 30 in Golden, Colo...

Mark DeKay, assistant professor of architecture, presented a paper on Possible Evolution of Technology Architecture at the European conference of the Association of American Colleges of Architecture held last fall in Copenhagen, Denmark.

To press

An article by Frances Foster, J.D., J.S.D., professor of law, titled "Parental Law, Harmful Speech and the Development of Legal Culture: Russian Judicial Chamber Discourse and Narrative," was published in The Yale Journal of International Law...

The third edition of "Administrative Law and Process in a Nutshell," co-written by Ronald Levin, J.D., professor of law, recently was translated into Japanese and published by Bokutaku-Sha Publishing. Levin also has agreed to co-write the next edition of an administrative law casebook by Arthur Bonfield and Michael Asimow. This text was published by West in 1989... .

Two articles by Murray L. Wax, Ph.D., professor emeritus of anthropology in Arts and Sciences, are to be published in upcoming journals. "Who Are the Iramas; What Are Their Narratives?" will be published in the Journal of the American Academy of Psychoanalysis. "On Dancing at Two Weddings: Biological and Hermeneutic Approaches of Psychoanalysis" will be published in the Journal of Child Analysis. In addition, he led four sessions with senior candidates on the topic "Is Psychoanalysis Scientific?" at the St. Louis Psychoanalytic Institute in January.

Guidelines for submitting copy: Send your full name, complete title(s), department(s), phone number and highest-earned degree(s), along with a typed description of your noteworthy activity, to For The Record, c/o David Moesner, Campus Box 1070, or p7225@wustl.wumail.wustl.edu. Items must not exceed 75 words. For information, call Moesner at (314) 935-5293.

Obits

Janet Acocks, graduate student at medical school

Janet M. Acocks, a graduate student in the School of Medicine's Program in Occupational Therapy, died in her sleep Thursday, Feb. 20, 1997, from an asthma attack. She was 43.

Acocks was on the verge of completing a master's degree in occupational therapy and was presented her research Thursday, Feb. 27, as part of the annual master's project presentations. As the culmination of nearly 30 years of Herbert's stewardship of the John Max Wulfing Collection of more than 13,000 coins, "Roman Imperial Coins" documents the history of the Roman emperors through their coinage and also marks the close of a chapter in the study of numismatics at Washington University.

The book contains an introductory essay on all of the emperors down to Marcus Aurelius, as well as full commentary and photographs of 1,053 coins. These publications also establish the foundation for future curators of the Wulfing Collection to build programs for the education and enjoyment of our large community of numismatists and scholars.

The book contains an introductory essay on all of the emperors down to Marcus Aurelius, as well as full commentary and photographs of 1,053 coins. The commentary relates the coins to the political and numismatic policies of such important emperors as Augustus, Tiberius, Nero, Domitian and Marcus Aurelius. (Excerpted from book jacket and foreword by Joseph D. Ranker, director of the Washington University Gallery of Art.)
One of the requirements is certificate or expert administrative skills; PC associate's degree; motivation; the use of Microsoft Word, Macintosh/Windows, or equivalent preferred; fluent in SAS, dBase or equivalent. Responsibilities include providing support to the allergy department; overseeing the Medical School/Hilltop/Hospital's network, including multiple fire servers and Web servers; and assisting the administration with grant award.

**System Manager (Remote)**
- Requirements: associate's degree in information technology or related field; familiarity with Linux, Unix, Netware, industry-standard network transport protocols, and vendor-specific Unix/Linux packages. Responsibilities include maintaining the server infrastructure, performing backups, and assisting the administration with grant award.

**Administrative Coordinators (Remote)**
- Requirements: associate’s degree and experience in research, development, and/or government multidisciplinary projects. Responsibilities include maintaining the server infrastructure, performing backups, and assisting the administration with grant award.

**Zho maps earthquake’s hypocenter**

Zho maps earthquake’s hypocenter — from page 1

Zho is the first seismologist to obtain high-resolution images of the three-dimensional seismic velocities and the Poisson's ratio of big earthquake’s hypocenter to infer structural characteristics.

Zho also used his seismic imaging techniques to find the locations of the Lawrence and 1994 Northridge earthquakes in California. He detected the hypocenters and found that those anomalies were closely related to each other in seismic locations and mechanisms. He recently received a grant from the U.S. Geological Survey for more research on the 1994 Northridge earthquake.

In other words, Zho could pinpoint the high-velocity structures that were evident by the Northridge earthquake.

The results of Zho’s Kobe analysis offer hope for pinpointing troublesome structures in earth’s early days, giving scientists better clues about seismic possibilities in a region.

Similar anomalies have been reported in northeastern Japan, where many active volcanoes lie on the Pacific Ocean tectonic plate. In 1983, Zho found that nearly all of the big earthquakes in this region occurred in areas with slow seismic velocities similar to those found in the Kobe seismic images. He discovered that volcanoes and underground magma chambers are important for the generation of the crust, and seismic velocity becomes slow in such areas because of the occurrence of big earthquakes. But there are no volcanoes in the Kobe area.

In contrast, in central and western Japan, Zho analyzed the seismic waves of more than 3,200 Kobe aftershocks and 431 local "micro" earthquakes and found that nearly all of the seismic waves were between 64,000 and 49,200 SW-wave arrival times. From this database, the seismic tomography revealed a high ratio of the transverse strain and the seismic velocity, and a high of the Poisson's ratio. This high seismic velocity and high Poisson's ratio is located at the Kobe earthquake's hypocenter, which is about 25 kilometers lateral.

Thus, it is crucial to obtain high-resolution images of the three-dimensional seismic velocities and the Poisson’s ratio of big earthquake’s hypocenter to infer structural characteristics.