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Words to win by: St. Louis Cardinals shortstop Ozzie Smith gave a speech of encouragement during opening ceremonies of the Special Olympics Basketball Tournament held Feb. 16 in the Athletic Complex. The Special Olympics is one of Washington's largest student-run philanthropy events. (Above) Smith signs an autograph for 12-year-old athlete Patrick Burke, while senior Scott Goldman, event chair, and junior volunteer Jodi Hirschfield look on.

Understanding our origins

Anthropologist's theory links flowering plants to primate evolution

An opposable thumb and forward-facing eyes come in handy for a creature that dwells in the trees. And for most of the 20th century, the traits that define primates have been credited to the arboreal (living in trees) way of life. The classic arboreal theory of primate origin depicts land-dwelling mammals moving into the trees, where survival depended on depth perception and climbing ability.

But Robert Sussman, Ph.D., professor of anthropology at Washington University, says there's more to it than that. Why were these creatures climbing through trees in the first place? In a new theory, he suggests that they were feeding on the tasty morsels of flowering plants, or angiosperms, which in turn developed more attractive flowers, seeds and fruits for animals to disperse as tropical forests evolved. He describes a process in which plant and animal interactions led to the characteristics of today's primates and tropical forests.

"It was a co-evolution," says Sussman, "a development of animals better able to disperse seeds and seeds better able to grow forests. They both needed each other to evolve."

Sussman presented his new theory of primate origin in a review article published in the June 1991 issue of the American Journal of Primatology. He proposes that characteristics such as grasping extremities, stereoscopic vision and hand-eye coordination evolved as successful adaptations for exploiting fruits and seeds located on fine end branches of the angiosperms. And while this happened millions of years before the emergence of our own genus, Homo sapiens, we too may have the flowering plants to thank for the features we share as primates. "It's the co-evolution of flowering plants and the ancestors of primates that led to any feature after that," says Sussman. "So we could say that our own evolution was basically dependent on our co-evolution with flowers and the fruits that flowers bear."

Changing the Textbooks

Sussman's theory is not the first to modify the classic textbook explanation of primate origin. In the 1970s, Matt Cartmill, Ph.D., of Duke University, challenged the arboreal theory, considered dogma since its development in the early 1900s. Cartmill raised questions about non-primate mammals with successful adaptations for life in the trees. Squirrels certainly maneuver adeptly through the trees. Why don't they look like primates? He also pointed out that stereoscopic vision is an important adaptation for hawks, cats and other predators that rely on vision to locate and capture prey.

Cartmill proposed an alternative to the arboreal theory. He said that primate characteristics developed not to accommodate life in the trees, but to enable detection and capture of insects in the lower forest canopy. His hypothesis became known as the visual predation theory, and textbooks changed accordingly.

Anthropology textbooks are changing once again as Sussman's theory becomes known. He argues that most modern primates are fruit eaters, and that the real impetus for developing primate-like traits was to eat plants, not insects.

Sussman's ideas appear in one of the most recently published anthropology texts *Primate Evolution*, written by Glenn Conroy, Ph.D., professor of anatomy and neurobiology and anthropology at Washington University, who most recently discovered a skull that may be the "missing link" in human evolution. The book is expected to become the most widely used text across the country in paleoanthropology. While there are many textbooks on human evolution, this book uniquely extends the scope of study from the origins of primate ancestors to the emergence of the Homo genus.

"The idea behind writing this book," says Conroy, "was to show students that humans didn't just sort of evolve out of nowhere. There's a whole evolutionary process of 70 million years of primate history that we come from, and this book concentrates on that. It brings the reader up to the emergence of Homo, our own genus."

In the text, Conroy describes the classic "arboreal theory," followed by Cartmill's "visual predation theory," and now Sussman's theory, which Conroy calls the "angiosperm radiation theory."

"Sussman has tried to look at the whole thing from an ecologist's point of view," says Conroy. "Maybe the development of keen sight and hand-eye coordination was for recognizing and reaching fruit."

Plants Adapted to Entice

Fossil evidence suggests that modern primates evolved 50 million years ago during the Eocene epoch of geologic history. Flowering plants evolved some 20 million years earlier during the Paleocene epoch. "During this time, a lot of changes in the angiosperms occurred," Sussman says. "Some changes indicate interaction between the angiosperms and the animals making use of their products. There's almost a parallel between this evolving angiosperm complex. Birds move in to eat the fruits and flowers; bats move in, and the only non-flying animal that's really taking advantage of this new niche is the primate."

Wind dispersed the first seeds of the angiosperms, but as animals started eating the most scrumptious seeds, plants produced bigger and bigger fruits. "By the Eocene," says Sussman, "you have modern fruit that's animal-dispersed."

Stereoscopic vision and hand-eye coordination enabled manipulation of the angiosperm food products, and movement among fine, or terminal,

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Dean Robert Virgil named executive vice chancellor

Robert L. Virgil, D.B.A., who has been serving as dean of the John M. Olin School of Business since 1977, has been named Washington University's executive vice chancellor for University relations, according to Chancellor William H. Danforth. Virgil will continue as dean of the Olin School until a successor is found. He begins his duties as executive vice chancellor on March 1, 1992.

In his new role, Dean Virgil will be responsible for the university divisions that deal with alumni and development programs, human resources, and public affairs. It is expected that a new dean for the School of Business will be named within 18 months, at which time Virgil will assume full-time responsibilities as executive vice chancellor.


Robert L. Virgil

"Bob Virgil continues to make a major impact on Washington University over the nearly three decades he has served as a teacher, scholar, manager, and academic officer. Since becoming dean of the John M. Olin School, he has seen it transformed into one of the top business education programs in America," Danforth said.

"During the last 15 years, the Olin School has significantly strengthened its faculty and student quality and has energized its alumni. The school also

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Fire strikes local shelter, students lead women to safety

Two Washington University students shepherded 17 women to safety when a fire broke out at a local shelter Feb. 6. Julie Evans, one of the students, was treated for burns at the Student Health Service. No one else required medical attention. The fire caused extensive damage to the building.

Evans, a graduate student in the George Warren Brown School of Social Work, and Natalie Fowler, a senior majoring in psychology, were spending the night in the Grace and Peace All-Women Shelter on Delmar Boulevard and Clara Avenue in the University City Loop.

Evans was the staff person in charge that evening. The staff person is responsible for keeping the peace and making sure rules are followed.

"I don't sleep during my night at the shelter," said Evans. "Since I'm in charge, I don't want anything to happen."

Evans said she had patroled the shelter just 10 minutes earlier and found nothing amiss. Suddenly, one of the women staying at the shelter yelled that there was a fire in the entryway.

"The fire must have started very quickly," said Lydia Ruffin, director of the shelter. "Julie had walked through the entrance area at 10 minutes to two and everything seemed fine. And then the fire broke out at two."

"Some guests came running in at 2 a.m. saying there was a fire," recounts Evans.

Both Evans and volunteer Fowler reacted quickly. "Natalie and I ran to put it out. It's interesting. Our first instinct was to grab a coat and try to

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Why is this lemur up in the trees? Robert Sussman, Ph.D., professor of anthropology, has a new theory that may explain why primates began climbing through trees in the first place. The theory is expected to greatly impact the future study of primate origins. His studies have taken him to the tropical forests of Madagascar.

Athol Fugard classic

Edison Theatre presents 'Blood Knot'

Athol Fugard's riveting classic "Blood Knot" will replace a previously scheduled production of his play "My Children, My Africa" at 8 p.m. March 6 and 7 in Edison Theatre.

"Blood Knot," a play about two "coloured" half brothers, one dark-skinned and one white-skinned, was written by Fugard in 1961. It was the first play ever performed in South Africa with a mixed-race cast. Edison Theatre presents "Blood Knot" as part of its "OVATIONS!" series, which offers a diverse selection of world-renowned performing arts events to the public.

The play spans two weeks in the lives of Zachariah, a black laborer, and Morris, his educated white brother and servant. Morris has returned to take care of Zach in an attempt to relieve his guilt for having passed as white. Though none of the scenes leaves the confines of the one-room shack, the play ranges widely from high comedy to deep tragedy. Zach and Morrie explore together the dark and light territory of their pasts, the frustrations and deprivations of their lives, and their dreams for the future.

Town Topics paper said of the play, "Zach and Morrie represent all brothers from biblical times to the present, and they are also black and white South Africa in microcosm, and all peoples of the world bound together by 'the blood knot, the bond between brothers.'"

Zachariah is played by South African Seth Sibanda. Sibanda has performed in many plays, including Hilary Blecher's "Poppie Nongena," for which he won an OBIE award. He was Zach in the critically acclaimed New York production of "Blood Knot" in 1990. In 1971 Sibanda founded an experimental theatre company in South Africa and co-authored the play, "Survival," which toured South Africa. New York City's Riverside Church was the site of its U.S. premiere in 1989.

Morrie is played by James Goode. Goode, a native of London, has appeared in productions of "One Flew Over the Cuckoo's Nest," "Blood Knot" and Arthur Miller's "The American Clock," as well as "Wind in the Willows" and "The White Devil" at the Royal National Theatre. Goode also is a composer and recently had a musical, "Cafecino," entered in the Edinburgh Festival.

Stephen Rayne, a white South African, will direct the production.

Stephen Rayne

Rayne directed the London production of "Blood Knot" and most recently an all-black production of "Macbeth" in New York. The director came to Britain in the 1960s and began working in the theatre as an actor. In the 1980s he began directing. Over the last several years he has directed many Royal Shakespeare Company productions, including "Twelfth Night," "Venus and Adonis" and "All God's Chillun Got Wings."

"OVATIONS!" events are made possible in part by grants from the Missouri Arts Council, the Regional Arts Commission, the Arts and Education Council of Greater St. Louis and the National Endowment for the Arts.

Tickets are $18 for the general public; $14 for senior citizens and Washington University faculty and staff; and $9 for students. For more information, call 935-6543.

Understanding our origins — *continued from p. 1*

branches. Natural selection was an interactive process. The most successful animals developed traits to exploit the food; plants developed products to attract the animals; and the larger animal-dispersed seeds grew into larger trees. Sussman describes this period as the "threshold for a modern forest to develop."

"You can't have large canopy rain forest trees without large seeds. And you can't spread a large seed with wind," Sussman explains. "So there's a whole process of getting larger seeds that can hold more nutrients for larger trees, evolving with animal dispersal. By the time you have animals able to eat these seeds and disperse them, you also had modern trees evolve."

Primates continue to be important seed-dispersal agents in tropical forests. Birds and bats evolved adaptations to reach the fruit through the air, while primates moved through the trees.

Testing the Theories

After hearing about Sussman's theory while a graduate student at Duke University, D. Tabb Rasmussen, Ph.D., now assistant professor of anthropology at Washington University, designed a modern-day test for all three theories of primate origin. He decided to apply the hypotheses, "to a real flesh and blood live animal." Rasmussen collected data on the primate-like wooly opossum and the non-primate like southern opossum, in a tropical forest of Costa Rica. The wooly opossum has a large brain, large eyes, small litters, and is very agile in trees. The southern opossum looks and behaves much like the opossum familiar to North Americans.

"I chose marsupials to try to represent most closely the ancestral primates," says Rasmussen. "What I wanted was one primate-like representative in a diverse group that did not include primate-like forms. The idea here is that selection is operating on that one to make it more primate-like. The rest remain non-primate like. This presumably corresponds to what was happening back in the Paleocene. There must have been a group of non-primate like animals; one of them became more primate-like and eventually became the ancestor primates."

Rasmussen compared behavior and diet information of the two opossums and related the data to the three theories of primate origin. He published the findings of his opossum study in the American Journal of Primatology. "We found that they were conforming to what both Cartmill and Sussman said," reports Rasmussen. "We saw both terminal branch foraging, and insect capture by visual predation, which suggests the theories are not mutually exclusive, but compatible to some degree. But the real cause is probably as Sussman says, primates tracking these angiosperm products and insect-foraging as a correlate to that."

Based on his study, Rasmussen suggests that once they began munching on flowers and fruits, the primate-like mammals started noticing and grabbing associated insects. Both behaviors required skill in negotiating movement through trees.

Glenn Conroy agrees with Rasmussen that the theories of primate origin overlap. He prefers, "an amalgamation of ideas. I think it's fair to say that no one theory will explain everything," Conroy says. "The truth lies somewhere among the different views."

Context is Key

Sussman seems to have broken new ground in paleoanthropology by approaching the question of primate origin from an ecological point of view. Rasmussen suggests that previous approaches took "a human-centered point of view," focusing on primate characteristics to the exclusion of environment. There is a natural fascination with traits so closely related to human characteristics. To understand our own opposable thumb and stereoscopic vision, we look at the features and overlook the context. "I think what we need to do more often is look at the evolution of primates in an ecological context," Rasmussen says. "Maybe it was something going on with the plants and other organisms that was more important than anything intrinsic to the primates."

Rasmussen believes the angiosperm radiation theory will have great impact on the future study of primate origins. "The kind of things Sussman has promoted are going to really change the way I study anthropoid origins (monkeys, apes and humans)" he says. "I think it also will affect the way people study hominid origin (australopithecines and humans). I think people will say, 'Hey wait a minute, we've been looking at fossil primates. Now let's step back and look at the other organisms in the broader evolutionary process, operating at the same time, to help us understand the primates."

Alison Richard, Ph.D., director of the Peabody Museum of Natural History at Yale University and professor of anthropology and environmental studies, adds, "Seeking to understand relationships between different kinds of plants and animals is like doing a jigsaw puzzle. Sussman has just added an interesting and important new piece to that puzzle. Ecological systems are very complex, and single explanations rarely suffice, but Sussman's ideas are a significant new step in that perennially fascinating quest to understand our own origins."

— Angela Davis

RECORD

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NOTABLES

David A. Bohley, a third-year law student at the School of Law, received a United States Senate Commerce Committee Fellowship. Bohley was selected for the award from among four of Missouri's top third-year law students. The year-long fellowship begins in Washington, D.C., in September.

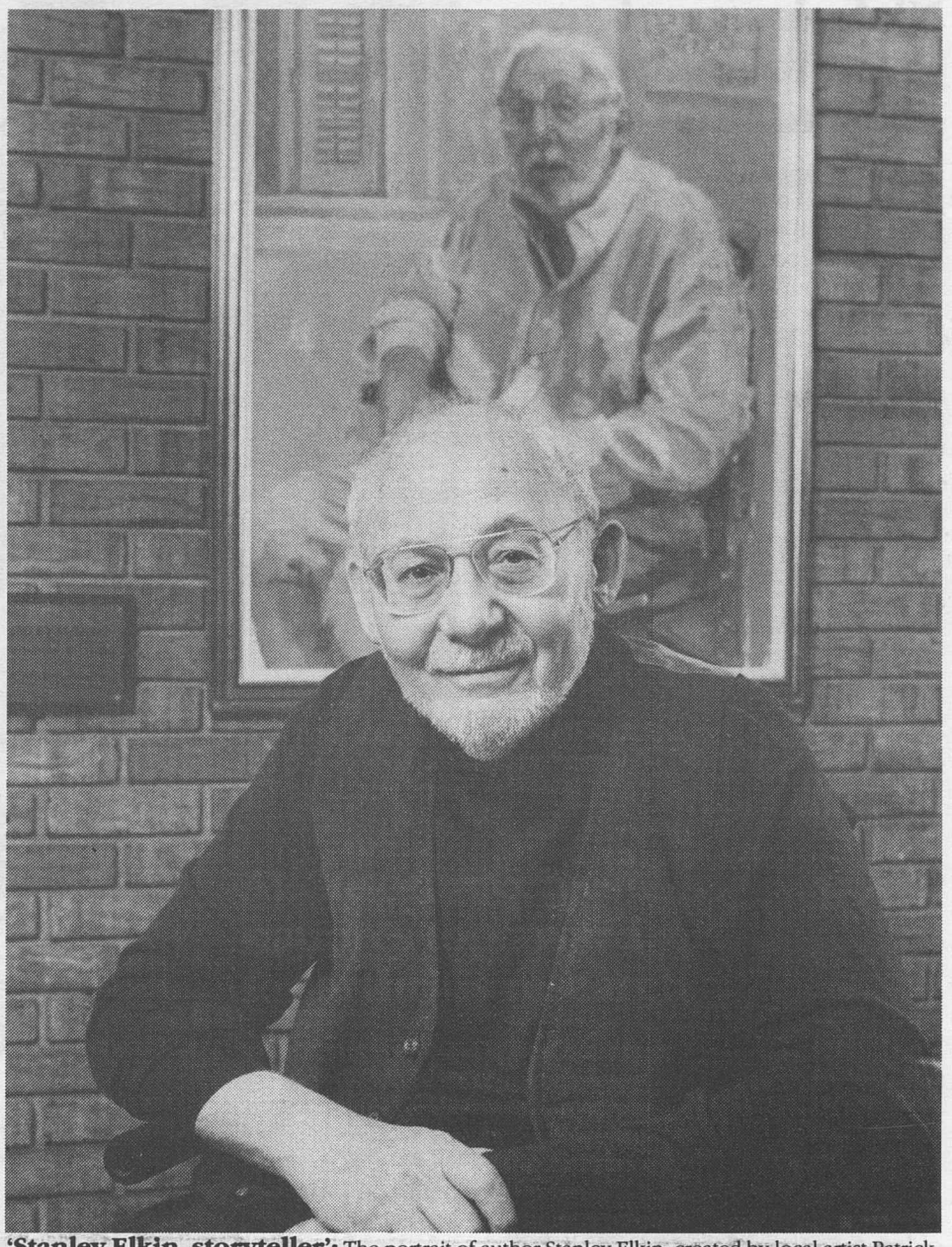
Robert Brackett, a graduate student in the Department of Earth and Planetary Sciences, received the award for outstanding student paper in planetology at the AGU meeting in San Francisco. Brackett's paper is titled "Cratering Mechanisms on Venus: Pressure Enhancement by the Atmospheric 'Ocean.'"

Peter Heath, Ph.D., assistant professor, and **Mohammad Salah Omri**, lecturer, both of Asian and Near Eastern Languages and Literatures, presented a paper on "Integrating Culture in the First and Second Year Language Classroom" at the annual meeting of the American Association of Teachers of Arabic in Washington, D.C. Heath also presented a paper on "Conservatives Adab, Mainstream Adab, and Radical Adab," at the 1991 annual meeting of the Middle East Studies Association in Washington, D.C.

Linda Hunt, instructor of occupational therapy, presented a paper on "Driving Performance in Mild Senile Dementia of the Alzheimer's Type" at the International Conference of Strategic Highway Research Program and Traffic Safety on Two Continents in Gothenburg, Sweden.

Have you done something noteworthy?

Have you: Presented a paper? Won an award? Been named to a committee or elected an officer of a professional organization? The Washington University Record will help spread the good news. Contributions regarding faculty and staff scholarly or professional activities are gladly accepted and encouraged. Send a brief note with your **full name**, **highest-earned degree**, **current title** and **department** along with a description of your noteworthy activity to Notables, Campus Box 1070, or by electronic mail to p72245DP at WUVMC. **Please include a phone number**.



'Stanley Elkin, storyteller': The portrait of author Stanley Elkin, created by local artist Patrick Schuchard, now hangs on the fourth floor of Olin Library. Elkin, Ph.D., the Merle Kling Professor of Modern Letters at Washington University, has written 15 works of fiction and essays. An exhibit of his works, titled "The Revenge of Style: Stanley Elkin, Storyteller" is on display in Olin's Special Collections unit until April 10. Elkin is the second Washington University professor to be honored with a portrait for his literary accomplishments. The first was the late poet Howard Nemerov.

Robert Virgil —

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has started numerous new academic and research programs, instituted a new curriculum, raised the support to build Simon Hall, and established a healthy endowment. Bob demonstrates the kind of leadership Washington University needs, as we face the challenges of the 1990s," Danforth added.

Dean Virgil joined the Washington University faculty as an assistant professor in 1964 and was named a full professor by 1972. He was named a visiting professor at Dartmouth's Amos Tuck School of Business Administration in 1975-76, following a year as Washington's vice chancellor of student affairs. After returning to Washington University, he became acting dean of the business school in 1977 and then dean in 1979.

He has served on many key committees at the University over the past two decades, including chairing the Faculty Senate Council and the Committee on the Recruitment of Underrepresented Faculty. He serves as a member of the Committee to Prepare for the 21st Century. He also chaired dean's search committees for the law school and for undergraduate admissions.

Virgil's teaching experience spans both managerial and financial accounting. He has been named teacher of the year on nine different occasions by his own students. He received his bachelor's degree from Beloit College in 1956; his master's degree in business administration and doctorate in business administration from Washington University in 1960 and 1967, respectively. Prior to joining the University faculty, he had a one-year residency with Arthur Andersen & Co.

He served as a director of the Federal Reserve Bank of St. Louis from 1983-89 and chaired its board in 1988-89. He was a director of the American Assembly of Collegiate Schools of Business from 1987-1990. and from 1985-89 he chaired the board of the Consortium for Graduate Study in Management, a nine-university effort to attract minorities into MBA study.

He is a director of the Angelica Corp., Maritz Inc., General American Life Insurance Co., CPI Corp., Allied Healthcare Products Inc., United Way of Greater St. Louis, INROADS/St. Louis, and Mary Institute. He was president of Girls Incorporated of St. Louis from 1987-1990 and now is an emeritus director.

He was a trustee of Beloit College from 1979-1982 and 1983-89. Beloit presented him the distinguished alumni citation in 1981.

Trustee emeritus, alum Paul Freund dies

Paul A. Freund, a Washington University trustee emeritus and alumnus, died Wednesday, Feb. 5, at his home in Cambridge, Mass. He was 83 years old.

Freund was a leading authority on U.S. constitutional law and the Supreme Court. A retired Harvard Law School professor, he was first elected to Washington University's Board of Trustees in October 1962. He served as a regular board member until October 1974, when he became a trustee emeritus, a position he held until his death. In 1956, the University awarded him an honorary doctor of laws degree.

Paul A. Freund

Freund wrote several books on law, including *On Law and Justice* and *On Understanding the Supreme Court.* He favored a flexible interpretation of the Constitution in economic and social matters. He also favored giving deeper protection to individual liberties of speech and press and racial justice.

Freund served as an official of the U.S. Solicitor General's office in the 1930s and 1940s. He was offered the position of solicitor general by President John F. Kennedy but reportedly turned it down so he could finish working on a history of the Supreme Court. He was appointed to Harvard's Carl M. Loeb professorship in 1958 and retired in 1976.

In 1928, Freund, a St. Louis native, graduated from Washington University with a bachelor's degree in arts and sciences. He received a bachelor of laws degree from Harvard in 1931 and a doctorate in 1932.

Freund was a fellow and past president of the American Academy of Arts and Sciences.

A private funeral service was held. He was buried at Mount Sinai Cemetery in St. Louis. There are no immediate survivors.

Fire —

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put out the fire. Then we tried water, but we really didn't have enough water pressure to do anything effective. Only after I came back with a bucket of water and the coatrack was in flames did I realize the need to get everyone out of the building," Evans said.

While one of the women at the shelter called 911, the students worked to get everyone out of the building. Some of the women made it out through the entryway. "The rest we took out through the front of the church," Fowler said.

Evans commended Fowler for her calmness during the fire. "I always work with Natalie," said Evans. "I'm so glad she was there that night. We were on the same wavelength, as far as what we should be doing."

The fire started in the entryway, near a coatrack and a large pile of coats. The cause is believed to be accidental. Two fire engines and a hook and ladder team and an EMS unit were called to the fire. St. Louis City firefighter Angelo Jennings said it took emergency personnel about an hour to get the fire under control.

"The basement hall is just a shell," said Barbara Granick, volunteer coordinator at the shelter. "The ceiling ended up on the floor, the walls burned through to the bricks, the bathrooms were very badly damaged, and glass on windows melted, as did the electrical wiring, which included the alarm and the telephones."

The coordinators said they plan to open the shelter as soon as possible, though it is unclear how long the repairs will take.

"Julie and Natalie were wonderful," says Granick. "They kept their heads and did everything right. They tried to put out the fire themselves and physically dragged some of the women out of the shelter. They had to physically restrain many of the women who wanted to go back in for their belongings."

'They kept their heads and did everything right.'

— Barbara Granick

The shelter, which is run by the Grace and Peace Church, is open five months of the year, during the cold months. About 20 of the volunteers that help staff the shelter have Washington University ties, from undergraduates to doctoral candidates to staff members, Granick estimates. Fowler became involved in the shelter through Intervarsity Christian Fellowship.

The shelter provides dinner and breakfast, as well as a place to sleep for up to 23 homeless women. During the day, the women either go to another shelter or onto the street.

Both Evans and Fowler downplay their heroism during the fire. But the church members are thrilled with the students' reaction during the emergency.

"It was really impressive that these two students had such clear thinking," says Ruffin. "It's a great role model for other students to see their fellow students acting so heroically."

— Debby Aronson

MEDICAL RECORD

Nicholas receives grant to study deaf infants

Johanna Grant Nicholas, Ph.D., a psychologist at Central Institute for the Deaf at Washington University Medical Center, has received a $478,139 grant to study communication development in deaf infants.

The five-year award, called First Independent Research Support and Transition (FIRST), comes from the National Institute of Deafness and Communication Disorders division of the National Institutes of Health. With the grant, Nicholas, an assistant professor of psychology in the speech and hearing department at Washington University, hopes to learn more about how children who are born deaf acquire the language skills necessary to effectively communicate.

"Prelingual deafness greatly inhibits a child's natural acquisition of speech and may affect other communicative processes as well," says Nicholas. "One important aspect of normal language development is the acquisition of a set of communicative functions, or uses, of language for social interaction. In this study, we hope to learn more about how those functions are developed in children who are born deaf."

The study will expand on Nicholas' previous research with deaf infants and their mothers, which indicates deaf children have a measurable communicative advantage over young normal-hearing children with similar verbal skills. In this study, Nicholas will examine infants age eight months and older — younger than those in the previous study — and try to identify what aspects of parent-child interaction appear to enhance communication before children learn to use words. Both oral and signing children will be included in the study.

Through her work, Nicholas hopes to develop an instrument to assess early communicative functions that can be used with both normal and hearing impaired children. In addition, she will continue to investigate how parent-child interaction may influence the way deaf children acquire and use communication skills. Ultimately, she hopes the research will aid in developing teaching objectives and specific intervention strategies for children with hearing impairments.

Book award honors Karl's medical career

The American College of Physicians has established a book award at the School of Medicine honoring Michael M. Karl, M.D., director of clinical affairs for the school's Department of Medicine.

The Michael M. Karl American College of Physicians Book Award will be presented annually by Karl to a graduating medical student who excels in the study of internal medicine and is committed to pursuing a career in the field. The award, which will be a textbook of the student's choice, will be presented for the first time at the 1992 graduation.

The American College of Physicians (ACP) is a non-profit organization of physicians trained in internal medicine. It includes practitioners providing primary care, medical specialists in cardiology, neurology and oncology, and other sub-specialties.

Karl has a longstanding association with the ACP and was the organization's Governor for Missouri from 1982-87. In 1990, the ACP recognized Karl by presenting him the Ralph O. Claypoole Sr. Memorial Award for achievement in the clinical practice of internal medicine and for devotion to the care of patients.

Roger K. Khouri, M.D., right, performs an autologous breast reconstruction with his surgical team at Barnes Hospital.

Autologous reconstruction

An alternative to silicone breast implants

A procedure that may provide a safer alternative to silicone breast implants for women who have had mastectomy is being performed at the School of Medicine.

The procedure, called autologous reconstruction, also is expected to have applications for women with faulty silicone breast implants, for those who are at high risk for breast cancer and those who want to enlarge their breasts, researchers say.

Autologous reconstruction involves taking excess skin and fat from the areas of a woman's body where fat deposits frequently occur — the lower abdomen, buttock or thigh — and molding a breast or breasts from the patient's own tissue. The technique is considered an improvement over existing reconstructive methods because it is free of the complications commonly associated with artificial implants, such as scar tissue formation, loss of sensation in the breast, shrinkage and leakage.

"Using a patient's own tissue is far superior to current artificial implant procedures," says Roger K. Khouri, M.D., assistant professor in the division of plastic and reconstructive surgery at the School of Medicine. "The tissue is not rejected, sensation returns to the breast, which never occurs with implants, and you avoid the potential complication of leakage and disfiguring scar formation."

There are several types of autologous reconstruction, but Khouri's expertise is with the microvascular free flap technique. In the last year, he has performed about 35 of these reconstructions, 10 of which involved both breasts. Khouri says the technique is adaptable to a variety of patients and requires removing only a minimal amount of muscle to obtain enough skin and fat to make a breast. Other conventional methods excise more muscle, which can cause problems with mobility and balance, and are not suited to all patients.

"With the microvascular free flap technique, we can take a piece of tissue, dissect with it the connecting artery and vein, then reconnect those small blood vessels at a new location on the same body," Khouri says. "This way, the tissue survives, and you can shape it, sculpture it, fold it and give it a new function."

The size of the skin flap used depends on the excess tissue available. On a patient of average size with some redundant lower abdominal fat and skin, an abdominal skin flap might be four to six inches from top to bottom, taken from the midsection of the abdomen across to the side. Khouri says the amount of tissue removed is similar to that taken for a tummy tuck, a cosmetic procedure to minimize a protruding stomach.

If the patient has no excess abdominal tissue, Khouri scouts alternative sites, such as the thigh and buttock. "That's the beauty of the microvascular free flap. If the patient is very, very slim, we have alternatives. And in the same process, the patient benefits from a tummy tuck, a buttock lift or a thigh recontouring."

While some plastic surgeons around the country are doing free flap reconstruction, Khouri says most take flap tissue from the abdomen because the blood vessel dissection is easier to perform. Dissection from the thigh or buttock is more difficult.

Autologous reconstruction takes longer to complete than implant reconstruction — five-to-six hours for one breast, eight hours for both — but Khouri says it can be performed at the time of the mastectomy. Implant reconstructive surgery after breast removal is done in at least two phases, both requiring general anesthesia and two hospital stays.

Recovery from an autologous reconstruction requires about one week in the hospital and several weeks at home before the patient can return to normal activities. Khouri says the treatment period for implant surgery can take several months.

One problem Khouri foresees is that many plastic surgeons may not have the necessary experience in microvascular surgery to feel comfortable doing the procedure. The primary complication with such delicate surgery, which involves blood vessels one-to-two millimeters in diameter, is blood clotting at the site of the blood vessel connection.

"This will be a problem nationwide, especially if (silicone) breast implants are banned by the Food and Drug Administration," Khouri says of the lack of microvascular surgical experience. "Most plastic surgeons will still do a pedicled flap (using lower abdominal skin and muscle) on the appropriate patients. But there will be a significant subset of patients on whom that procedure can't be done, and to whom except for a free flap operation there is no alternative."

Khouri believes the microvascular free flap is ideal for reconstruction after surgery for breast cancer and says it also has applications for women who are at high risk for breast cancer and those who have had multiple operations to correct faulty implants.

G.D. Searle funds inflammation research

Four researchers at the School of Medicine have received two-year grants totaling more than $659,000 from G.D. Searle & Co. to fund inflammation research.

Sixty-one investigators in the U.S. and Canada were chosen by the pharmaceutical company to share a $10 million grant earmarked to support studies of inflammatory processes.

The researchers are: Barbara Jakschik, Ph.D., research associate professor of molecular biology and pharmacology; Aubrey Morrison, M.B., professor of medicine and molecular biology and pharmacology; Charles Parker, M.D., professor of medicine and molecular microbiology; and Julian Ambrus, M.D., associate professor of medicine.

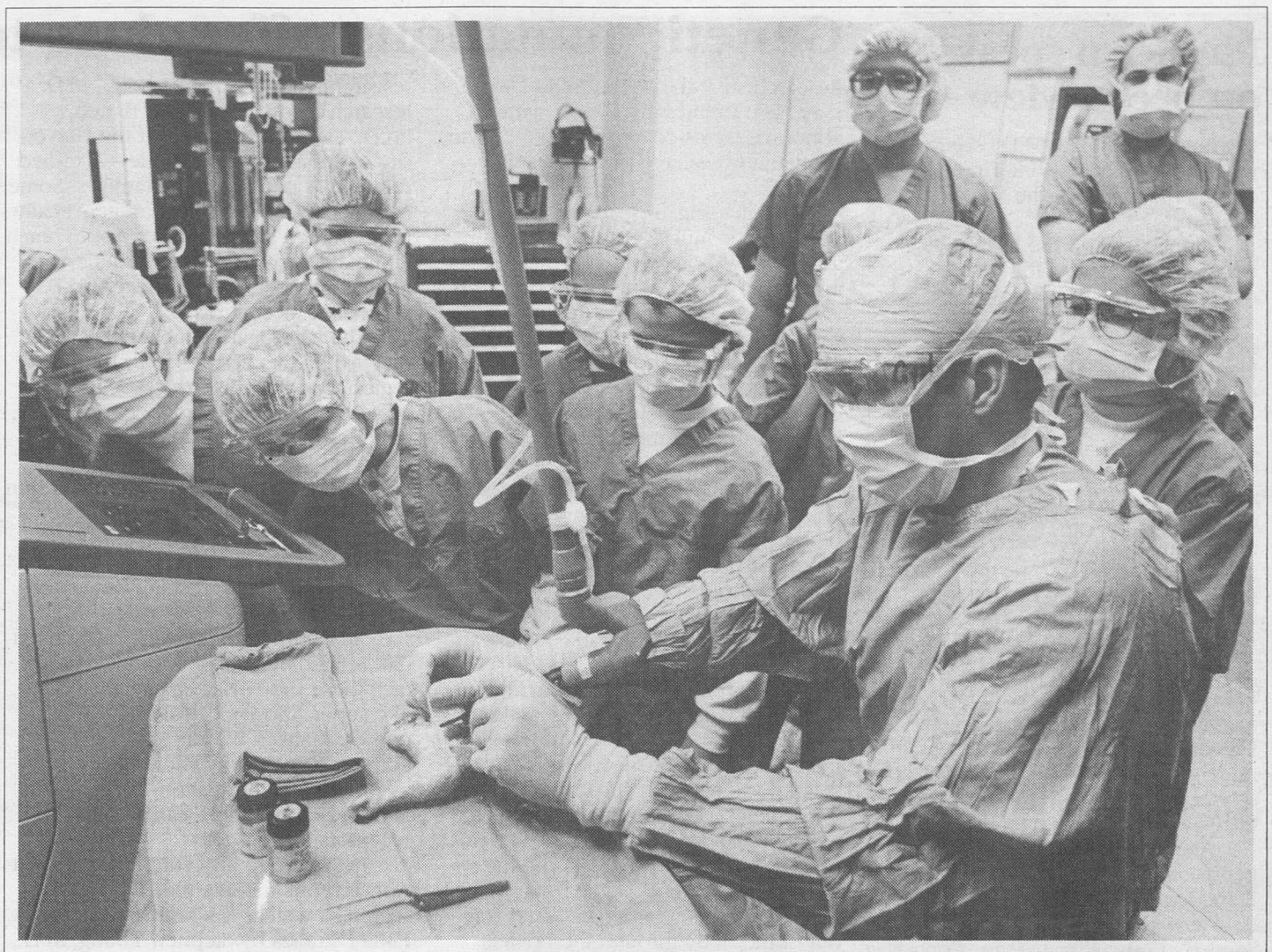
Jakschik, who received $140,000, will use the grant to study the role of mast cells in causing disease-related inflammation. Mast cells sit next to blood capillaries and release inflammatory chemicals into the blood. Parker's $160,000 grant will be used to look at the effect of fatty acid metabolism on production of interleukin-4, an immune system regulator important in allergic reactions. Morrison received $169,000 to study the role of the immune system chemical interleukin-1 in regulating substances that effect kidney inflammation. Ambrus received $190,000 to study how natural body chemicals called prostaglandins regulate antibody-producing cells.

Medical school boasts nation's best physicians

The School of Medicine boasts some of America's best and brightest doctors, according to a new and select directory of leading physicians in the United States and Canada. The directory, which will be published this month, includes 53 School of Medicine physicians.

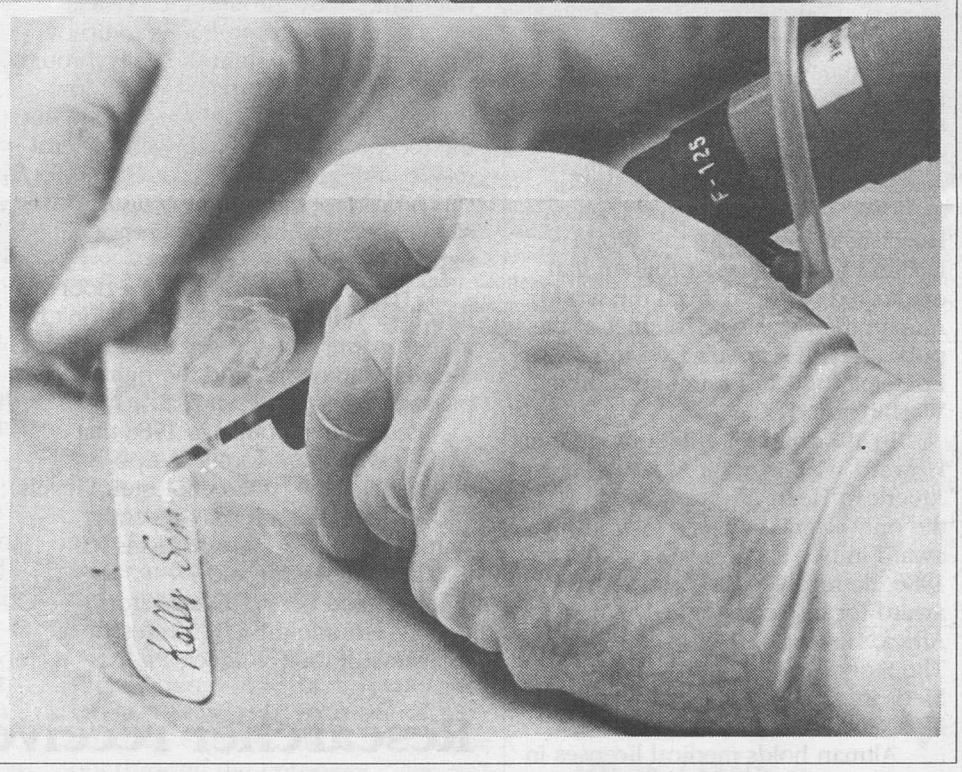
The book was compiled by asking doctors across the country to recommend a specialist to whom they would send a relative or friend if they needed care. After one year and more than 11,000 telephone calls, 3,800 physicians in virtually every medical specialty were listed in the book.

The directory is published by Woodward/White Inc., of Aiken, S.C., the same firm that published The Best Lawyers in America in 1983. The following physicians from the School of Medicine are listed in The Best Doctors of America: Leonard Berg, neurology; Dennis M. Bier, pediatrics; William J. Catalona, urology; Ralph V. Clayman, urology; Barbara R. Cole, pediatrics; Joel D. Cooper, thoracic surgery; James L. Cox, thoracic surgery; Philip E. Cryer, endocrinology and metabolism; Ralph G. Dacey, neurological surgery; W. Edwin Dodson, neurology; John M. Fredrickson, otolaryngology; Edward M. Geltman, cardiovascular disease; Samuel B. Guze, psychiatry; Alex H. Kaplan, psychiatry; Henry J. Kaplan, ophthalmology; Michael A. Kass, ophthalmology; James P. Keating, pediatrics; Saulo Klahr, nephrology; Ira J. Kodner, surgical oncology; Allan E. Kolker, ophthalmology; Nicholas T. Kouchoukos, thoracic surgery; William M. Landau, neurology; Philip A. Ludbrook, cardiovascular disease; Rodney P. Lusk, otolaryngology; Susan E. Mackinnon, plastic surgery; Susan B. Mallory, dermatology; Paul R. Manske, hand surgery; Jeffrey L. Marsh, plastic surgery; Richard E. Mattison, psychiatry; Benjamin Milder, ophthalmology; Harlan R. Muntz, otolaryngology; G. Alexander Patterson, thoracic surgery; Carlos A. Perez, radiation oncology; Roy H. Petrie, obstetrics and gynecology; William J. Powers, neurology; Arthur L. Prensky, neurology; Henry D. Royal, nuclear medicine; Stuart S. Sagel, radiology; Julio V. Santiago, pediatrics; James R. Schreiber, obstetrics and gynecology; Gregorio A. Sicard, general surgery; Barry A. Siegel, nuclear medicine; Peter G. Smith, otolaryngology; Nathaniel J. Soper, general surgery; Thomas L. Spray, thoracic surgery; Gregory A. Storch, pediatrics; Robert C. Strunk, allergy and immunology; J. Regan Thomas, otolaryngology; Teresa J. Vietti, pediatrics; John B. Watkins, pediatrics; Paul M. Weeks, hand surgery; Samuel A. Wells, general surgery; and Neil H. White, pediatrics.



21st century physicians

Joel A. Goebel, M.D., assistant professor of otolaryngology at the School of Medicine, recently played host to 4th grade gifted students from Trautwein School. Goebel, who was enthusiastic about the students' interest in medicine, said of his young visitors, "Who knows who among this class may one day be doctors."



Above: Joel A. Goebel demonstrates laser surgery to 4th grade students from Trautwein School. The students, who are in the gifted class taught by Mersine Kallaos, were studying medical careers.

Right: Goebel pens a students name on a tongue depressor using the laser. Children received the nameplates as souvenirs of their field trip.

Researchers study controversial THA drug treatment

The School of Medicine is one of approximately 35 centers nationwide taking part in the clinical investigation of THA, a controversial drug that some believe helps reverse the mental deterioration caused by Alzheimer's.

Twenty Alzheimer's patients who are age 50 or older and have no physical health problems are needed for the one-year clinical study, which will determine the effectiveness of higher doses of THA than have been previously tested. Volunteers will receive the drug, testing and medical supervision free of charge.

Physicians at the School of Medicine also have been selected to take part in an expanded access program, whereby several thousand Alzheimer's patients nationwide who are ineligible to participate in the one-year clinical study will have the opportunity to receive the experimental drug THA. Patients in this program will be monitored for side effects, such as liver damage, and will be required to pay for the medication.

John C. Morris, M.D., associate professor of neurology at the School of Medicine who will oversee the studies, says as yet there is no conclusive evidence to show that THA is today effective in treating the disease. Nevertheless, he approves of distributing the drug under controlled circumstances to more people as long as patients and their families do not have unrealistic expectations.

"I will be surprised if THA turns out to be the key drug for treating Alzheimer's disease," Morris says. "But even if it's not,THA has been valuable in laying groundwork for second generation drugs."

In the Memory and Diagnostic Center at Jewish Hospital, Morris is currently studying another drug manufactured that may one day be used to treat Alzheimer's. In addition, the School of Medicine is part of a national consortium of 30 Alzheimer's disease programs that will evaluate new compounds for potential drug trials. One drug in this regard is Deprenyl, which has been suggested to retard brain cell degeneration in Parkinson's patients. If this effect proves to be true, Morris says the drug may have similar applications with persons suffering from Alzheimer's.

"This is an exciting time in Alzheimer's disease research," Morris says. "New information is revealed virtually everyday. We try to use that information to identify compounds that may help treat the disease. This provides hope for patients and their families. For so long Alzheimer's disease has been considered untreatable, but I think that is going to change."

The Memory and Aging Project, which is conducting the THA studies, also seeks volunteers age 65 or older, who are in good health, but are experiencing difficulty with memory. Participants receive a thorough assessment to determine the severity and source of memory difficulties as well as treatment recommendations. Persons over the age of 85, with mild or no forgetfulness, are particularly of interest.

Also needed for comparison are Parkinson's Disease patients 60 years or older with mild to moderate motor difficulties, with or without memory difficulties.

Alzheimer's disease, the fourth leading cause of death in the United States, destroys the mind by crippling its victims' ability to think, recognize relatives and care for themselves. Currently, there is no effective treatment or cure.

For more information about the studies or to volunteer, call the Memory and Aging Project at 362-2683.

Women needed to volunteer

The Program on Aging at Jewish Hospital is seeking female volunteers to study the role of estrogen in maintenance and improvement of memory, balance and heart disease.

Women who are between the ages of 70 and 85, and have some memory problems or have experienced a fall or unsteadiness in the past year are needed for the study examining the benefits of estrogen. Recent research suggests that estrogen, the female hormone produced before menopause, may prevent falls, unsteadiness and loss of memory. In addition, the hormone also may increase circulation both to the brain and heart.

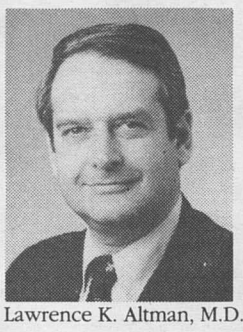
For more information about the study, call 454-8150.

MEDICAL RECORD

Physician speaks on peer review

Lawrence K. Altman, M.D., science writer for The New York Times, will speak next month at the School of Medicine.

Altman, one of the few medical doctors working as a full-time newspaper reporter, will discuss "The Myth of Passing Peer Review," at 11:30 a.m., March 12, in Carl V. Moore Auditorium, 660 South Euclid. In addition to reporting, Altman also writes the "Doctor's World" column in Science Times.



Lawrence K. Altman, M.D.

A 1958 graduate of Harvard University, Altman received his medical degree in 1962 from Tufts University School of Medicine. As an undergraduate and while in medical school, Altman wrote sports and feature stories.

Altman served his medical internship at Mt. Zion Hospital, San Francisco, in 1962-63. For three years, he was with the U.S. Public Health Service's Centers for Disease Control in Atlanta as editor of its Morbidity and Mortality Weekly Report, a journal dealing with reported cases of communicable diseases in the world. He then helped set up a measles immunization program for eight West African countries, which later was merged with the World Health Organization's program that eradicated smallpox from the world. Altman then was named chief of the public health service's Division of Epidemiology and Immunization in Washington, D.C.

In 1982 and 83, Altman won the Howard W. Blakeslee Award of the American Heart Association. He is the only science writer to win the award in two successive years. In 1986, he received the George Polk award for his series on AIDS in Africa. His book, "Who Goes First? The Story of Self-Experimentation in Medicine," is published by Random House.

Altman holds medical licenses in the states of Washington, California and New York, and is a clinical associate professor at the New York University Medical School.

Altman's lecture is sponsored by the School of Medicine and is open to the public.

Charles Reed dies

Charles Andrew Reed, research associate in pediatrics at the School of Medicine, died of congestive heart failure Feb. 5, at St. Joseph Hospital of Kirkwood. He was 60.

Reed began his career at the School of Medicine in 1958 as a research assistant. He attended Indiana University and earned his bachelor's degree in zoology from Washington University.

He is survived by his wife, Margaret "Peggy" Reed, Webster Groves; three daughters, Janet Swallow, Maplewood, Jennifer Barney, Tulsa, Okla., and Cheryl Reed, Webster Groves; four sons, David A. Reed, Ballwin, Dr. Phillip A. Reed, Indianapolis, and Thomas A. Reed and Paul A. Reed, Webster Groves; his father, Dr. Fred S. Reed, Danville, Ind.; two sisters, Grace Jackson and Jean Clem, Indianapolis, and four grandchildren.

Genetic mutations offer clues to heart disease

Researchers at the School of Medicine may have found why people with abnormal forms of a cholesterol-carrying protein always have low cholesterol levels.

The investigators studied people with genetic mutations that result in abnormally short forms of apolipoprotein-B, called Apo-B. Apo-B is one of several types of molecules that carry cholesterol in the bloodstream. They found that Apo-B proteins missing one particular segment may cause liver cells to remove cholesterol from the blood more efficiently, leaving blood cholesterol levels low. These mutations also may cause newly synthesized cholesterol to be released into the bloodstream more slowly than normal, reports Elaine Krul, Ph.D., research assistant professor of medicine.

The findings were presented at the 64th Scientific Session of the American Heart Association.

Cholesterol is formed primarily in liver cells, where it is packaged along with a protein or lipid carrier before being released into the bloodstream. A small portion of this circulating cholesterol is removed from the blood by a variety of body cells to form cell membranes and hormones. Most blood cholesterol is cleared by the liver, where it is converted into bile acids and sent out of the body through the bowels.

For cholesterol to be taken up by liver cells, it must enter the cells through receptors on their surfaces called low-density lipoprotein (LDL) receptors. But the receptors will not allow cholesterol inside until they bind to a specific spot on cholesterol's accompanying Apo-B, a site designed to fit LDL receptors, explained Krul.

"The LDL receptor is like a doorway into liver cells. The cholesterol won't be able to come into the cell unless it's got the right password, and the right password is Apo-B," she said.

Researchers found in 1988 that people with short forms of Apo-B always had low blood cholesterol levels. "But researchers are only recently starting to look for mechanisms to explain why," Krul said.

Krul and her co-investigators — Gustav Schonfeld, M.D., professor of medicine; Robert Wagner, Ph.D., research fellow; Klaus Parhofer, M.D., research fellow; and Hugh Barrett, Ph.D., assistant professor at the University of Washington in Seattle — studied roughly 75 people in five families. Some members of each family had genetically programmed short forms of Apo-B; each family had slightly different mutations. Family members with normal Apo-B were used as controls.

The investigators looked at Apo-B that still had its LDL-receptor binding region, but was missing the segment of protein beyond it. In a laboratory study, they found that these Apo-Bs were bound at least as well or better than normal by LDL receptors on human skin fibroblast cells. The finding suggested that liver LDL receptors might find it easier to grab this form of Apo-B and might pull more cholesterol out of the blood as a result.

"It seems that you don't really need that remaining part of the molecule. In fact, these proteins seem to be acting like super Apo-B's," Krul said. "That's one mechanism we can say partially accounts for the low cholesterol, assuming that these short forms of Apo-B can also bind more easily to LDL receptors in liver cells."

Krul's group also studied very short Apo-B forms missing the LDL-binding region as well as the segment beyond it. Earlier studies by Stephen Young, M.D., and colleagues at the University of California, San Francisco, had shown that these Apo-Bs could not bind to LDL receptors. Young's findings suggested that the low cholesterol levels were not due to fast removal by the liver. Parhofer and Barrett in Krul's group tested a new possibility: that the low blood cholesterol was due to a low Apo-B synthesis rate.

Parhofer and Barrett found the synthesis rate of very short Apo-B by injecting patients with labeled amino acids, then measuring the amount of these amino acids that later turned up in their Apo-B proteins.

"What we found is that these shorter Apo-B forms are actually synthesized at a slower rate," Krul said. Slow Apo-B synthesis would also slow cholesterol release into the blood because cholesterol must join with Apo-B before it can leave liver cells, Krul explained.

"Because it's not the full length of the protein, it probably can't be packaged into a cholesterol complex as efficiently, so as a result the liver just releases less cholesterol."

The study eventually may lead to better treatment for patients.

"We know this protein is very important in the development of atherosclerosis," Krul said. "If we can understand more about how the protein works and how it can help predispose a person to have low or high cholesterol, it can eventually give us more information about how to treat these people and how to prevent heart disease."

For example, it might be possible to develop drugs that cause the body to make a more beneficial form of the protein-cholesterol complexes or that increase the number of LDL receptors. Gene therapy someday may be used to program DNA to produce the most beneficial form of Apo-B, Krul said. But the possibilities are still speculation at this point, she added.

Researcher receives virology award

Herbert W. Virgin IV, M.D., Ph.D., assistant professor of medicine at the School of Medicine, has been selected to receive the 1992 Burroughs Wellcome Fund Young Investigator Award in Virology.

As a Burroughs Wellcome Fund Young Investigator, Virgin, who also is assistant professor of pathology and of molecular microbiology, will receive $90,000 over the next three years to conduct research on how the immune system fights viral infections at specific sites in the body.

There are several routes by which viruses can enter the body, such as the skin, intestinal tract and lungs. One of the most important is the intestinal tract, or gut, because viruses that have been swallowed can enter nerves or the bloodstream and spread if the immune system fails to fend them off. Cytomegalovirus, HIV and polio virus are known to enter the body in this manner.

Virgin's work focuses on the immune response of the intestinal tract and how its mucosal barrier or lining thwarts the spread of disease. Like the protective lining of the mouth and lungs, the intestinal tract's lining has a specific and detailed immune response to infection, though it is not well understood. Understanding intestinal immunity is key to developing vaccines to protect against viruses entering via the intestinal tract.

Through his work with animal and viral models, Virgin wants to learn more about the protective role of the immune system's T-cells and how they recognize disease-causing viruses. T-cells are a family of immune system cells that destroy invaders like viruses. Virgin wants to define the types of T-cells present in the intestinal tract and learn how they target the invading virus. He also will compare the roles of antibodies and T-cells at this site. Antibodies, which also fight off disease, are made in response to an infection and are found in the blood and/or are secreted into saliva or the intestinal contents.

The virology award provides support for one physician per year trained in infectious diseases and virology to begin a research program. The award is open to physicians who have completed a postdoctoral fellowship and have accepted a junior faculty position.

The Burroughs Wellcome Fund, financial supporter of the award, is a private, nonprofit foundation supported by Burroughs Wellcome Co., a research-based pharmaceutical firm headquartered in Research Triangle Park, North Carolina.

Atkinson receives nation's top award for arthritis research

John P. Atkinson, M.D., professor and head of the division of rheumatology at the School of Medicine, has received the 1991 Lee C. Howley Sr. Prize for Arthritis Research from the Arthritis Foundation. The $20,000 prize is considered the most prestigious arthritis research award in the country.

The Howley Prize is given annually to recognize researchers whose work over the past five years represents a significant advance in the treatment, prevention and understanding of arthritis and rheumatic diseases. Atkinson shares the award with Douglas T. Fearon, M.D., professor of medicine and director of the division of molecular and clinical rheumatology at Johns Hopkins University School of Medicine. The Arthritis Foundation requested nominations from researchers around the country. A Foundation committee chose the winners.

Atkinson studies the structure, function and genetics of the complement system, a group of proteins of the immune system, and how it relates to the disease lupus. Complement proteins help the body rid itself of foreign particles. Deficiencies in some of these proteins can lead to rheumatoid diseases such as certain forms of arthritis and lupus. Atkinson's work has played a key role in defining ways in which the complement system is activated, and ways in which the system's damaging actions in attacking the body's own cells might be controlled.

Atkinson discovered a complement protein in 1985 called membrane cofactor protein (MCP), responsible for protecting cells from being attacked by the body's immune system. MCP may someday be used to protect transplant organs from rejection or to trick the body into killing its own tumor cells.

Atkinson joined the Washington University faculty as an assistant professor of medicine and head of the rheumatology division in 1976. He became a full professor in 1984. Since 1976 he has been an investigator for the Howard Hughes Medical Institute. The institute supports medical scientists at academic medical centers and universities throughout the United States. He serves on the editorial boards of six medical journals, among them the Journal of Immunology and the Annals of Internal Medicine.

PERSONNEL NEWS

WASHINGTON UNIVERSITY
Percentage of Female and Minority Employees in Each EEOC Job Category
(Categories as Defined by Equal Employment Opportunity Commission)*

		Female	Black	Asian/ Pacific Islander	American Indian/ Alaskan Native	Hispanic	Employees In Each Job Category
JOB CATEGORIES		**1991**	**1991**	**1991**	**1991**	**1991**	**1991**
Faculty	N	342	24	104	3	32	1592
Executive/Administrative/Managerial	N	482	73	7	2	4	757
Professional Non-Faculty	N	752	82	184	2	16	1278
Secretarial/ Clerical	N	1486	360	18	6	18	1652
Technical/ Paraprofessional	N	785	175	91	2	17	1278
Skilled Craft	N	0	20	1	3	0	200
Service/ Maintenance	N	137	248	7	2	5	364
All Categories	N	3984	982	412	20	92	7121
	%	55.9	13.8	5.8	.28	1.3	

*EEO-6 (11/91)

University Committed to affirmative action policy

I. Purpose

Washington University is committed to providing equal opportunity to all qualified individuals in its employment and personnel practices, and to policies and practices that will assure that there shall be no discrimination against any person on the grounds of race, color, age, religion, sex, sexual orientation, national origin or handicap. Affirmative action will be taken in the recruitment, hiring and promotion of minorities, females, the handicapped and veterans.

To ensure effective compliance with the University's policies and its commitment under pertinent executive orders and laws, positive affirmative action is being undertaken concerning equal employment opportunity. Such action includes:

A. Recruitment of minority, female, veteran and handicapped personnel in all job categories with special emphasis being directed toward those categories where deficiencies exist;

B. Utilization of existing (federal or other) work incentive and training programs, where applicable, to qualify persons for entry-level positions;

C. Appointment of representatives to develop plans for the recruitment, training and promotion of minority, female, veteran and handicapped persons; and

D. Continuation and development of programs and opportunities for minority residents in the University community aimed at better understanding and relations.

II. Policy

Washington University is committed to a policy of equal employment opportunity without regard to race, color, religion, sex, sexual orientation, national origin, veteran status or handicap. Decisions on employment are made on the basis of the qualifications of the individual for the position being filled. Decisions on promotion are made on the basis of the qualifications of the individual as they relate to the requirements of the position for which he or she is being considered.

All personnel policies — including those on compensation, fringe benefits, transfers, training programs, and the like — are administered without regard to race, color, religion, sex, sexual orientation, national origin, veteran status or handicap. These policies apply to all employees in all schools and departments of the University.

The University also is committed to affirmative action to increase the numbers and job levels of qualified members of minority groups of women, of veterans and of the handicapped in those areas in which numbers may be low in relation to the available supply of qualified individuals. To this end, an affirmative action program has been developed and affirmative action officers have been appointed for the Hilltop and Medical campuses.

Chancellor William H. Danforth stated the University policy on affirmative action in a letter to members of the faculty, administrative officers and staff dated Dec. 13, 1971, as follows:

"Other interests and problems may demand our attention, but the affirmative action program must be kept on the front burner by the administration and by every division, department and school. Affirmative action should come to mind every time we seek a new person. What is right to do is what we must do because national and institutional goals coincide with federal regulations. Without considerable effort, however, all our good intentions will amount to nothing."

III. Annual review

The affirmative action program is reviewed each year. The review covers a 12-month period beginning on Oct. 1 and ending on Sept. 30. Deans, department heads, directors and supervisory personnel participate in an annual review of school and departmental employment practices, including salary analysis.

The purpose of the review is twofold: to assess the progress that Washington University is making in providing equal employment opportunity; and to take corrective action, if it is appropriate.

The 1990-91 annual review was completed in December 1991. The table profiles the Washington University employment community by Equal Employment Opportunity Commission (EEOC) job category.

Professional job searches under way

Washington University is conducting searches to fill professional positions on the Hilltop campuses.

Associate-Industrial Contracts and Licensing Specialization-Biotechnology

Work with the director of industrial contracts and licensing and the faculty to evaluate invention disclosures, identify industrial sponsors, obtain industrial research support, and carry out licensing activity. Knowledge of modern biology required, preferably with training at M.A. level or higher in a field relevant to biomedicine. One or two years experience in technology transfer strongly preferred, including general understanding of patent law, licensing principles, contract writing and negotiation skills. Strong oral and written communication skills are required. Compensation based on training and experience. Applicants should send a resume and cover letter containing names, titles, addresses and phone numbers of three references to: Susan E. Cullen, Ph.D., Research Office, Campus Box 8013, Washington University, One Brookings Drive, St. Louis, MO 63130-4899.

Director, Medical Communications

Qualifications: Should possess a bachelor's degree, preferably with a specialization in medical journalism or communications; at least five years experience in the media or public relations field, preferably in science or medicine; demonstrated skill in science writing and demonstrated knowledge of media operations and requirements; ability to plan, organize, implement and manage a national news media relations program and to supervise the work of others; and the ability to work well with faculty, researchers and administration.

Duties: Will assist in developing the School of Medicine's external communications programs, especially those related to national news media; initiate and maintain contacts with key writers and editors of local, regional and national importance; supervise arrangement of media coverage of medical school faculty, events and accomplishments; maintain, through the medical communications staff, a "beat" system of regular contact with the departments, institutes, centers and other programs in medicine; direct the medical communications staff and evaluate its performance; coordinate the regular, monthly production of medical feature stories; supervise the writing, editing and faculty approvals of such stories.

Position available immediately. Deadline for resumes: April 1. Send resume and samples of medical writing to: Donald Clayton, associate vice chancellor/executive director of Medical Public Affairs, Washington University School of Medicine, Campus Box 8065, 660 S. Euclid Avenue, St. Louis, MO 63110.

Director, Student Health Service

Washington University is seeking a physician/administrator with a strong clinical focus, coupled with interest and experience in the issues of young adult health care. This individual must provide innovative, creative leadership to the established Samuel B. Grant University Health Service. Special consideration will be given to candidates with an orientation toward health promotion and education.

General responsibilities: The director reports, through the associate dean of students for student services, to the vice provost/dean of student affairs. The director serves as administrator and clinical practitioner for a comprehensive student health center that includes outpatient medical care, gynecology, psychiatry, general surgery, orthopedic surgery and dermatology clinics and a medical laboratory. The director provides leadership and supervision to clinicians, nurses, and ancillary staff. Responsibilities include direct patient care, administrative duties, active participation and involvement in emergency responses and promotion of health education programs. The director serves as a member of the Division of Student Affairs management team.

Specific responsibilities: Develops, maintains, and provides leadership for a comprehensive health services operation. Supervises the recruitment, hiring, training and evaluation of the clinic staff, which consists of part-time physicians, a physician's assistant, registered nurses, and ancillary staff. Performs normal duties of a health service physician including examination, care and treatment of physical, emotional or mental illness. Develops, administers and supervises budget preparation and expenditures. Participates in the development and implementation of a health promotion and education program, including alcohol and drug education, human sexuality, AIDS education and wellness components. Coordinates the provision of direct support services for a nine-bed infirmary. Participates in the development and administration of an extended medical benefit plan. Maintains periodic weekend and holiday on-call duty coverage, and serves as special consultant for management of health-related emergencies on campus. Serves as sponsor and adviser to a highly successful student-run Emergency Support Team. Serves as an active member of the Division of Student Affairs management team, participates in division and University-wide committee and project assignments, and performs special administrative assignments as directed. Maintains involvement in professional associations related to college health.

Qualifications: MD degree, five years of full-time clinical practice beyond medical residency, direct experience in professional staff supervision and health-care management, board certification in family practice, internal medicine or adolescent medicine, and experience in college health or community health education. Progressive, creative and student-oriented disposition, as well as strong interpersonal, communications, and leadership skills are essential.

Application information: The position is available July 1. Salary commensurate with education, training and experience. Please submit a letter of application, resume, three current letters of recommendation, and a one page statement of personal philosophy on college health to: Justin X. Carroll, associate dean of students, Campus Box 1136, Washington University, One Brookings Drive, St. Louis, MO 63130-4899.

In addition to the professional searches, qualified candidates are sought to fill the following Hilltop Campus positions: clerical, two positions; coordinator, one position; library assistant, one position; part time, four positions; secretary, two positions; and assistant director, two positions.

Information about these and other positions is available through the Hilltop Campus Office of Human Resources, Room 126, N. Brookings Hall, 935-5990 or the medical human resources office, 4480 Clayton Ave., 362-7195.

Personnel News

Personnel News appears monthly in the Record and is prepared by Gloria W. White, vice chancellor for human resources and affirmative action officer, and other members of the Office of Human Resources. Personnel News is designed to keep Washington University employees and their families informed of the benefits and opportunities available at the University.

CALENDAR

Feb. 20-29

LECTURES

Thursday, Feb. 20

1:10 p.m. George Warren Brown School of Social Work Lecture, "Health Care: What Step Next," Merton C. Bernstein, WU Walter D. Coles Professor of Law. Brown Hall Lounge.

4 p.m. Dept. of Chemistry Seminar, "Para-Hydrogen-Induced Polarization: A New Spin on Hydrogenation Reactions," Richard S. Eisenberg, prof., U. of Rochester. Room 311 McMillen.

4 p.m. Dept. of Earth and Planetary Sciences Colloquium, "Seismic Discontinuities Near Subduction Zones: Implications for Mantle Convection," John E. Vidale, U.S. Geological Survey, and research geophysicist, U. of California, Santa Cruz. Room 102 Wilson Hall.

4 p.m. Dept. of Physics Theory Seminar, "Dimensional Expansions," Carl Bender, WU prof. of physics. Room 241 Compton Hall.

4 p.m. Central Institute for the Deaf Seminar, "Studies in Pitch," Andrzej Rakowski, Chopin Academy of Music, Warsaw, Poland. Second Floor Aud., Clinics and Research Bldg., 909 S. Taylor.

5 p.m. Division of Biology and Biomedical Sciences Seminar, "Regulation of Cell Matrix Interactions," Bill Parks, WU prof. of internal medicine. Room 423 McDonnell Bldg.

8 p.m. Committee on Comparative Literature, International Writers Center, Latin American Studies, and Dept. of Romance Languages and Literatures Lecture, "The Writer as Language Bigamist," Elena Castedo, author of *Paradise*. Stix International House.

Friday, Feb. 21

9:15 a.m. Pediatric Grand Rounds, "Recent Advances in Child Abuse," Robert M. Reece, assoc. prof. of pediatrics, Case Western Reserve U. Clopton Aud., 4950 Audubon Ave.

Noon. Dept. of Cell Biology and Physiology Seminar, "Mitosis, Small GTPases, and the Drosophila Mutant Quartet," Clarissa Cheney, WU asst. prof. of genetics. Room 423 McDonnell.

1 p.m. Dept. of Earth and Planetary Sciences Colloquium, "Sediment Accretion, Erosion, Subduction and Recycling at Convergent Margins: Constraints From Cosmogenic 10Be," Julie Morris, staff scientist, Dept. of Terrestrial Magnetism, Carnegie Institution of Washington. 102 Wilson.

4 p.m. East Asian Colloquium, "Benten of the West: An American Missionary's Portrayal in Izumi's Kyoka's Fiction," Cody Poulton, Dept. of Pacific and Asian Studies, U. of Victoria, Canada. Room 30 January Hall.

4 p.m. Dept. of Music Lecture with Donal Fox, St. Louis Symphony, and WU jazz composer-in-residence. Room B-8 Blewett Hall.

4 p.m. Anatomy and Neurobiology Seminar, "What Distinguishes Infants From Adults?" Nigel Daw, WU prof. of cell biology and physiology. Room 928 McDonnell Medical Sciences Bldg.

7:30 p.m. Dept. of Earth and Planetary Sciences and NASA's Missouri Space Grants Consortium Present a St. Louis Astronomical Society Meeting, "Gravity Waves," Clifford Will, WU professor of physics. Room 112 Wilson.

Saturday, Feb. 22

9 a.m. Neural Sciences Seminar, "Isolation and Characterization of Gene Encoding a Homeobox Protein That is Expressed in the Embryonic Mouse Head," Jon Rubenstein, U. of California, San Francisco. Erlanger Aud., McDonnell Bldg.

11 a.m.-12:30 p.m. University College Saturday Seminar, "The Americanization of Cristobal Colon," Wayne Fields, dean of University College, chair of WU Dept. of English and author, *What the River Knows*. Women's Bldg. Lounge. Free.

Sunday, Feb. 23

4 p.m. Dept. of Biology Presents the Viktor Hamburger Lecture, "From NGF to a Gene Family: Old Concepts, New Perspectives," Hans Thoenen, prof., Dept. of Neurochemistry, Max-Planck-Institute for Psychiatry. 215 Rebstock Hall.

Monday, Feb. 24

Noon. Dept. of Biology Seminar, "Some Thoughts on Functional Diversity of Terminal Oxidases," Robert Maier, Johns Hopkins U. Room 309 Rebstock Hall.

4 p.m. Immunology Seminar, "Mechanisms and Consequences of Leukocyte-Endothelial Interactions," John M. Harlan, prof. and head, Division of Hematology, U. of Washington School of Medicine, Seattle. Third Floor Aud., Children's Hospital, 400 S. Kingshighway.

4 p.m. Dept. of Psychology Seminar, "An Interaction Model of Impression Formation," Miles Patterson, Dept. of Psychology, U. of Missouri, St. Louis. Room 218 Eads Hall.

4 p.m. Dept. of Biology Seminar, "Molecular Biology of Cytochromes in N2-Fixing and Hyperthermophilic Microorganisms," Robert Maier, Johns Hopkins U. Room 322 Rebstock.

8 p.m. School of Architecture, Student Union, and Women in Architecture Present a Lecture, "Recent Work," Toshiko Mori, architect, Toshiko Mori Architects, New York. Steinberg Hall Aud.

Tuesday, Feb. 25

3:30 p.m. European Studies Program Lecture, "European Integration Seen From a Netherlands Perspective," Steven E. Ramondt, consul general of the Netherlands. Women's Bldg. Lounge.

4 p.m. Molecular Microbiology Seminar, "Effects of Mutations in a Viral 'Lipo-Protein on the' Assembly and Structure of Sindbis Virus," Milton Schlesinger, prof., WU Dept. of Molecular Microbiology. Room 775 McDonnell.

4 p.m. Dept. of Anthropology Colloquium, "Human Impact on Madagascar," Henry Wright, prof., Dept. of Anthropology, U. of Michigan. Room 101 McMillan.

4 p.m. Dept. of Chemistry Seminar, "Recent Studies of Aromatic Nitrenes," Matthew S. Platz, prof., Ohio State U. Room 311 McMillen.

4 p.m. Dept. of Biology Seminar, "How Do Cells Turn Over Proteins?" Richard Vierstra, Dept. of Horticulture, U. of Wisconsin-Madison. Room 322 Rebstock Hall.

5 p.m. Dept. of Pediatrics Seminar, "Cytoskeletal Protein Interacting With Cadherin Cell Adhesion Molecule: Implications for Developmental Signaling," Pierre McCrea, Dept. of Pharmacology, U. of California,San Francisco. Third Floor Aud., Children's Hospital, 400 S. Kingshighway Blvd.

Wednesday, Feb. 26

NO ASSEMBLY SERIES LECTURE FEB. 26

8 a.m. Dept. of Obstetrics and Gynecology Grand Rounds, "Clinical Management of Human Papilloma Virus," Stanley A. Gall, Donald E. Baxter Professor and chair, Dept. of Obstetrics and Gynecology, U. of Louisville. West Pavilion Amphitheater, Barnes Hospital.

4 p.m. East Asian Studies Colloquium, "Gendering Sexuality in Early Medieval Japan," Hitomi Tonomura, Dept. of History, U. of Michigan. Room 30 January Hall.

4 p.m. Dept. of Biochemistry and Molecular Biophysics Seminar, "Protein-Mediated DNA Loops-Modulation by Homotropic and Heterotropic Interactions," Michael Brenowitz, Dept. of Biochemistry, Albert Einstein College of Medicine, New York. Cori Aud., 660 S. Euclid.

4 p.m. Dept. of Physics Colloquium, "Exchange Interactions in Rare Earth Artifical Metal Superlattices," James Rhyne, U. of Missouri-Columbia. Room 204 Crow Hall.

Thursday, Feb. 27

4 p.m. Dept. of Chemistry Seminar, "Electron Transfer Photochemistry," Patrick S. Mariano, prof., U. of Maryland. Room 311 McMillen.

4 p.m. Assembly Series Lecture, "The Arab-Israeli Peace Prospect," Rashid Khalidi, director, Center for Middle Eastern Studies, U. of Chicago, member, joint Palestinian-Jordanian delegation, Middle East peace conference. May Aud., Simon Hall.

4 p.m. Central Institute for the Deaf Research Seminar, "Further Studies of 'Clear' and Conversation Speech: Segment Duration Measurements and Perception of Time-Altered Speech," Rosalie M. Uchanski, Sensory Communication Group, Research Laboratory of Electronics, Massachusetts Institute of Technology, Cambridge. Second Floor Aud., Clinics and Research Bldg., 909 S. Taylor Ave.

4 p.m. Dept. of Biology Seminar, "Regulation of the Phenolpropanoid Pathway in Arabidopsis," William Kubasek, Dept. of Molecular Biology, Massachusetts General Hospital, Boston. Room 202 Life Sciences Bldg.

4 p.m. Dept. of Earth and Planetary Sciences Colloquium, "Developments in the Study of the Terrestrial Impact Record," Richard A.F. Grieve, head of applications/research scientist, Geophysics Division, Geological Survey of Canada. Room 102 Wilson Hall.

Friday, Feb. 28

9:15 a.m. Pediatric Grand Rounds, "Interferon and Other Therapy for Chronic Viral Hepatitis," Robert P. Perrillo, WU prof. of medicine. Clopton Aud., Wohl Clinic, 4950 Audubon Ave.

Noon. Dept. of Cell Biology and Physiology Seminar, "Studies on Herpes Simplex Virus," Paul Olivo, WU asst. prof., Dept. of Medicine. Room 423 McDonnell Medical Sciences Bldg.

PERFORMANCES

Friday, Feb. 21

8 p.m. Edison Theatre "OVATIONS!" Series Presents "Spalding Gray," Program I. Edison Theatre. **SOLD OUT.** For info., call 935-6543.

8 p.m. Performing Arts Dept. Presents "Plenty." (Also Feb. 22, 28, and 29, same time, and Feb. 23 at 7 p.m. and March 1 at 2 p.m.) Mallinckrodt Center Drama Studio, Room 208. Cost: $7 for general public; $5 for senior citizens, students and WU faculty and staff. For more info., call 935-6543.

Saturday, Feb. 22

8 p.m. Edison Theatre "OVATIONS!" Series Presents "Spalding Gray," Program II. Edison Theatre. **SOLD OUT**. For info., call 935-6543.

Sunday, Feb. 23

2 p.m. Edison Theatre "ovations! for young people" Series Presents "Simply Grimms Stories," performed by Illustrated Theatre Touring Company. Edison Theatre. Cost: $7. For more info., call 935-6543.

Wednesday, Feb. 26

8 p.m. Association of Black Students Presents a Musical Performance, "Ladysmith Black Mombazo." Co-sponsored by Student Union, KWUR and Congress of the South-40. Edison Theatre. Cost: $20 for general public; $15 for WU faculty; and $10 for students with current ID cards. For tickets, call 935-6518.

EXHIBITIONS

"Washington University Art Collections." Through May 1992. Gallery of Art, lower gallery, Steinberg Hall. Hours: 10 a.m.-5 p.m. weekdays; 1-5 p.m. weekends. For info., call 935-5490.

"Columbus of the Woods: Daniel Boone and the Myth of Manifest Destiny." Through March 29. Gallery of Art, lower gallery, Steinberg Hall. Hours: 10 a.m.-5 p.m. weekdays; 1-5 p.m. weekends. Free. For info., call 935-5490.

"Helen and Newton Harrison Changing the Conversation: Environmental Projects Proposed and in Progress." Through March 22. Gallery of Art, upper gallery, Steinberg Hall. Hours: 10 a.m.-5 p.m. weekdays; 1-5 p.m. weekends. Free. For info., call 935-5490.

"The Revenge of Style: Stanley Elkin, Storyteller." Through April 10. Olin Library, Special Collections, Level 5. Hours: 8:30 a.m.-5 p.m. weekdays. Free. For info., call 935-5495.

"School of Fine Arts Council Exhibit." Feb. 28-March 22. Opening reception: 5-7 p.m. Feb. 28. Bixby Gallery, Bixby Hall. Free. For more info., call 935-6597.

"Joseph Beuys Video Collection." Through April 26. Gallery of Art, upper gallery, Steinberg Hall. Hours: 10 a.m.-5 p.m. weekdays; 1-5 p.m. weekends. Free. For info., call 935-5490.

MUSIC

Sunday, Feb. 23

2:30 p.m. Dept. of Music Presents a Concert with the WU Wind Ensemble. St. Louis Art Museum Theatre. Free.

4 p.m. Dept. of Music Voice Recital with soprano Mimmi Fulmer, prof. of voice, U. of Wisconsin, Madison. Steinberg Hall Aud. Free.

8 p.m. Graham Chapel Organ Recital Series and the St. Louis Chapter of the American Guild of Organists Present an Organ Recital with Robert Glasgow, prof. of organ, U. of Michigan. Graham Chapel. Free. For info., call 721-1502.

FILMS

Thursday, Feb. 20

7 and 9 p.m. Filmboard Foreign Series Presents "Rififi," a French film with English subtitles. Room 100 Brown Hall. $3. **For 24-hour Filmboard hotline, call 935-5983.**

Friday, Feb. 21

7 and 9 p.m. Filmboard Feature Series Presents "Draughtman's Contract." (Also Feb. 22, same times, and Feb. 23 at 7 p.m.) Room 100 Brown Hall. $3.

Midnight. Filmboard Midnight Series Presents "Shot in the Dark." (Also Feb. 22, same time, and Feb. 23 at 9:30 p.m.) Room 100 Brown Hall. $3. On Fri. and Sat., both the 9 p.m. and midnight films can be seen for a double feature price of $4; both Sunday films can be seen for $4.

Monday, Feb. 24

2 p.m. Dept. of Russian Presents a Film, "A Forgotten Tune for a Flute," subtitled in English. Room 219 South Ridgley Hall. Free.

7 and 9 p.m. Filmboard Classic Series Presents "Oliver!" (Also Feb. 25, same times.) Room 100 Brown Hall. $3.

Tuesday, Feb. 25

7 p.m. Dept. of Asian and Near Eastern Languages and Literatures Presents a Film, "Legend of Tianyun Mountain," a Chinese film. Room 100 Busch Hall. Free.

Wednesday, Feb. 26

7 and 9 p.m. Filmboard Foreign Series Presents "Vengeance is Mine," a Japanese film with English subtitles. (Also Feb. 27, same times.) Room 100 Brown Hall. $3.

Friday, Feb. 28

7 p.m. Gay and Lesbian Association of Student Social Workers Presents a Film, "Torch Song Trilogy." Brown Hall Lounge. Free.

7 and 9 p.m. Filmboard Feature Series Presents "The Killer." (Also Feb. 29, same times, and March 1 at 7 p.m.) 100 Brown Hall. $3.

Midnight. Filmboard Midnight Series Presents "Live and Let Die." (Also Feb. 29, same time, and March 1 at 9:30 p.m.) Room 100 Brown Hall. On Fri. and Sat., both the 9 p.m. and midnight films can be seen for a double feature price of $4; both Sunday films can be seen for $4.

SPORTS

Friday, Feb. 21

7:30 p.m. Men's Basketball. WU vs. Brandeis U. Field House. Free.

Sunday, Feb. 23

1 p.m. Women's Basketball. WU vs. U. of Rochester. Field House. Free.

3 p.m. Men's Basketball. WU vs. U. of Rochester. Field House. Free.

Thursday, Feb. 27

8 p.m. Women's Basketball. WU vs. Brandeis U. Field House. Free.

Saturday, Feb. 29

6 p.m. Women's Basketball. WU vs. Carnegie-Mellon U. Field House. Free.

8 p.m. Men's Basketball. WU vs. Carnegie-Mellon U. Field House. Free.

MISCELLANY

Friday, Feb. 21

2 p.m. Dept. of Music Voice Master Class with soprano Mimmi Fulmer, prof. of voice, U. of Wisconsin, Madison. Steinberg Hall Aud. Free. For more info., call 935-5581.

Tuesday, Feb. 25

9 a.m.-4 p.m. Computer-Integrated Manufacturing Center Presents a Seminar, "Production Activity Control," Richard Godin, fellow, DePaul U. Graduate School of Business. School of Technology and Information Management Lab, 1144 Hampton Ave. Cost: $50 for WU students, faculty and staff. For public pricings, registrations and more info., call 935-4444.

Saturday, Feb. 29

6 p.m. The Black Alumni Council Fourth Annual Scholarship Dinner, with speaker Ronald L. Thompson, president and chair, GR Group, and member, WU Board of Trustees. Stouffer Concourse Hotel, 9801 Natural Bridge Road. Cost: $40 per person; $400 for table of ten. For more info., call 935-5690.

Calendar Deadline

The deadline to submit items for the Feb. 27-March 7 calendar of the Record is noon Feb. 21. Items must be typed and state **time, date, place, nature of event, sponsor** and **admission cost.** Incomplete items will not be printed. If available, include **speaker's name** and **identification** and the **title of the event;** also include your name and telephone number. Send items to Marilyn Chill, Box 1070, or by electronic mail to p72245CM at WUVMC.

Clifford Will to discuss 'gravity waves'

"Gravity Waves," an illustrated lecture by Clifford Will, Ph.D., professor and chair of the Department of Physics, will be featured at the Friday, Feb. 21 meeting of the St. Louis Astronomical Society. The meeting, which is free and open to the public, will be held at 7:30 p.m. in Room 112 of Wilson Hall.

The lecture centers on a peculiar feature of Einstein's General Theory of Relativity, the generation of "gravity waves." Will, a fellow of the McDonnell Center for Space Sciences, is an internationally known expert in gravitation and Relativity Theory. In addition to technical works, Will also writes for the non-specialist. His 1987 book, *Was Einstein Right?* won the Science Writing Prize of the American Institute of Physics.

The astronomical society is an organization for individuals interested in astronomy and telescopes. The meeting is co-sponsored by the Department of Earth and Planetary Sciences and NASA's Missouri Space Grants Consortium. For more information, call 935-4614.