1-25-1996

Washington University Record, January 25, 1996

Record
WASHINGTON UNIVERSITY IN ST. LOUIS
Vol. 20 No. 17 Jan. 25, 1996

Mission to gather data on origin of cosmic rays

The cosmic ray astrophysics group in the McDonnell Center for the Space Sciences and the Department of Physics in Arts and Sciences recently completed the development of its part of a $9.8 million instrument that will gather valuable information on the origin of cosmic rays during a space flight scheduled for launch next year on a Delta-II rocket.

Robert Binns, Ph.D., research professor of physics, leads the group that designed and built half of the Cosmic Ray Isotope Spectrometer (CRIS) experiment. That half was delivered last month to the California Institute of Technology in Pasadena, where it is being integrated with the rest of the instrument.

In addition to Washington University and Caltech, scientists and engineers from the Goddard Space Flight Center in Greenbelt, Md., and the Jet Propulsion Laboratory in Pasadena also are involved.

Designed to measure the abundances of galactic cosmic ray isotopes of nuclei as light as Helium and as heavy as Zinc, the instrument will fly aboard NASA's Advanced Composition Explorer (ACE) spacecraft, set to launch in August 1997. ACE's primary mission is to observe energetic particles within the solar system. The Earth constantly is being bombarded by a stream of accelerated particles coming at it not only from the sun but also from sources in our Milky Way galaxy. The study of these energetic particles will lead to a better understanding of their origin and acceleration and the formation and evolution of the solar system.

ACE will carry six high-resolution

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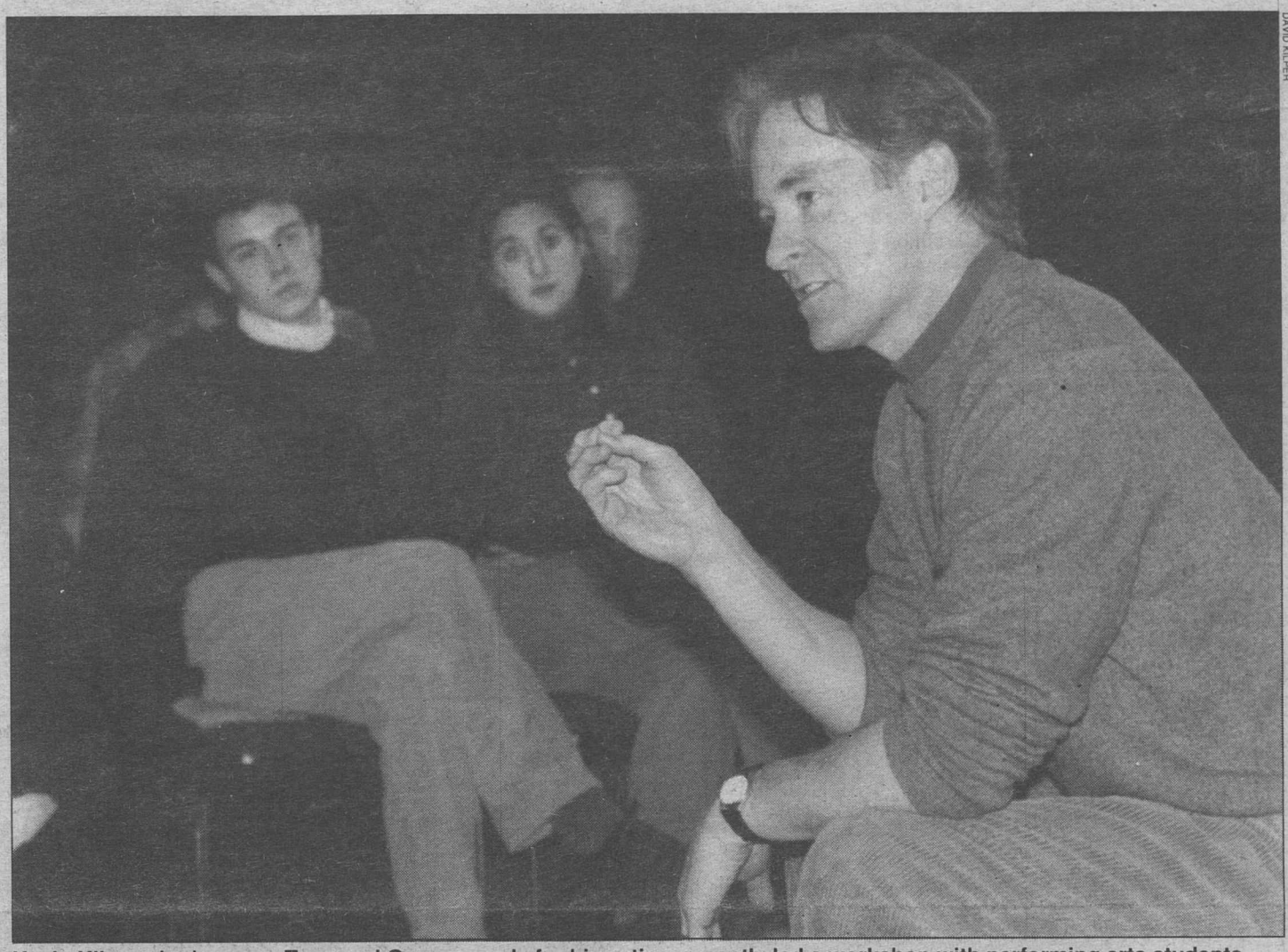

DAVID KILPER

Kevin Kline, who has won Tony and Oscar awards for his acting, recently led a workshop with performing arts students about the art of Shakespearean acting.

'As big as life gets'

Kevin Kline calls Shakespearean verse a 'most extraordinary gift'

Award-winning actor and former St. Louisan Kevin Kline visited Washington University recently to discuss the art of Shakespearean acting and to offer some career advice to performing arts students.

About 150 University acting majors and faculty members joined the tall, amicable actor in the Drama Studio, Room 208 Mallinckrodt Center, for the three-hour workshop Jan. 12.

Kline, who grew up in Clayton and attended Priory School, was in town for a family reunion. He made time for the workshop at the request of Henry I. Schvey, Ph.D., professor of drama and of comparative literature and chair of the Performing Arts Department in Arts and Sciences.

During the workshop, Kline answered questions from the group, worked with several students on passages from Shakespeare's plays, and discussed his deep passion for the works. Kline admitted, however, that his initial exposure to Shakespeare was less than inspiring.

"It was all completely incomprehensible to me," Kline said of the works he read in school. "I was fearful of the language. You had to look up every third word."

He recalled experiencing his first live performance of a Shakespeare play as a high school student. The production was "King Lear" and was staged in Edison Theatre.

"I walked out at intermission," Kline said.

Despite these early misgivings, Kline eventually developed a deep love for the works. He graduated from Indiana University in Bloomington with a bachelor's degree in acting and completed graduate studies in drama at The Juilliard School in New York. It was in New York in 1972 that he joined the highly regarded Acting Company, run by actor John Houseman. The company took Shakespeare to audiences across the country — including those at Washington University.

Kline's roles as Hamlet and Romeo, among others, won rave reviews from audiences and critics alike. Even after forging a successful career in Hollywood — with such cinema hits as "The Big Chill," "A Fish Called Wanda," "Dave" and "French Kiss" — Kline continues to perform Shakespeare at every possible opportunity.

"I realize, in retrospect, I was the kind of audience that I have to convert now," Kline told the group. "You have to make the audience listen. The problem is the language; it's arcane and archaic. Our job as actors is to make it real — make it happen.

"The most extraordinary gift any actor can have is to say these (Shakespeare's) words," Kline continued. "It's talking, but it happens to be poetry. Poetry is passion; it's written in a highly emotional state. I don't want to say it's bigger than life. It's as big as life gets."

Despite the "four-to-five-second attention span" of most people today, Shakespeare is more popular than ever, Kline said. He noted that there are a wealth of summer festivals and theater companies that perform the plays throughout the country. He told the bud-

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New psychology chair appointed

Henry L. "Roddy" Roediger III, Ph.D., has been appointed chair of the Department of Psychology in Arts and Sciences, announced Edward S. Macias, Ph.D., executive vice chancellor and dean of Arts and Sciences.

The appointment will take effect in the summer of 1996. John A. Stern, Ph.D., professor of psychology, who has served as department chair since 1987, will return to full-time teaching and research.

Roediger comes from Rice University in Houston, where he had been the Lynette S. Autrey Professor of Psychology since 1988. From 1973 to 1988, he served on the faculty of Purdue University in West Lafayette, Ind., where he became an associate professor in 1978 and a full professor in 1982. He also has been a visiting professor at the University of Toronto.

Henry L. Roediger III

"We are pleased and honored that Roddy has agreed to serve as the new chair of psychology," said Macias. "The psychology department carries out one of the largest and most popular undergraduate programs in Arts and Sciences, along with strong programs of research and graduate education. The department also is engaged in significant cooperation across disciplinary lines at Washington University. We are delighted that Professor

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Search begins for vice chancellor for research

A seven-member advisory committee has been appointed to help in the search for a vice chancellor for research at Washington University, announced Chancellor Mark S. Wrighton, Ph.D.

The vice chancellor for research will assist the University's leadership in setting and implementing research policy. The vice chancellor is expected to play a leadership role in formulating and developing new research initiatives, especially ones involving highly interdisciplinary research programs, and will serve as a key University liaison with federal, corporate and foundation sponsors of research.

The vice chancellor will oversee the Research Office, which is supervised by Susan E. Cullen, Ph.D., associate vice chancellor for research and professor of genetics and of molecular microbiology. In addition, the vice chancellor will be responsible for a newly established Office of Technology Transfer with a director to be selected by the incoming vice chancellor.

The advisory committee that will help search for the vice chancellor for research will work with Wrighton. The advisory committee members are: chair John P. Atkinson, M.D., Adolphus Busch Professor and chair of the Department of Medi-

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Total quality 6
Business and social work students will work with area schools to improve their effectiveness

Medical Update

Stroke-preventing drug cost-effective, improves life expectancy

A new study has shown that a potent but expensive stroke-preventing drug works better and is more cost-effective for certain high-risk patients than aspirin, which also is used to prevent strokes and costs only pennies a day. The report was published in the Dec. 12 issue of the Journal of the American Medical Association.

In the study, high-risk patients were those with an irregular heartbeat, called atrial fibrillation, who also had two or more additional risk factors for stroke. These included hypertension, diabetes, heart disease or previous strokes. Atrial fibrillation affects an estimated 2.2 million Americans — most older than 65 — and causes about 80,000 strokes each year.

Despite costing 80 times more than aspirin, the blood-thinning drug warfarin saves money because it prevents more strokes, thereby reducing hospitalization, physician and rehabilitation costs, said lead investigator Brian Gage, M.D., who joined Washington University last summer as assistant professor of medicine. The cost of treating a stroke is estimated at $25,000 for the first year.

"Currently, about half of patients with atrial fibrillation are not receiving warfarin," said Gage, who conducted the study while at Stanford University. "Our study underscores the need to identify these patients to see if they are candidates for warfarin therapy."

In addition, the researchers found that during a 10-year period, 65-year-old patients at high risk of stroke survived an average of three months longer if they received warfarin instead of aspirin and six months longer if they received warfarin instead of no treatment at all.

"Three months may not seem like a long time, but for these patients, it can mean a lot," Gage said. The additional survival is similar to that received from mammogram screening for breast cancer, the authors noted.

Gage's co-authors at Stanford were: Douglas Owens, M.D., assistant professor of medicine; Gregory Albers, M.D., director of the Stanford Stroke Center; and Andria Cardinalli, an undergraduate student.

The work was funded by grants from the Palo Alto Institute for Research and Education and from the Veterans Affairs Health Services Research and Development Field Program.

The investigators drew their conclusions by analyzing data from seven clinical trials of 5,100 elderly patients with atrial fibrillation and measuring quality of life in the patients. They combined this information with medical costs using a computer model to compare warfarin to aspirin or to no therapy.

Atrial fibrillation causes rapid and erratic heart contractions in the heart's upper chambers, called the atria. The heart's irregular pumping action can cause blood clots to form in the atria. A stroke occurs when a blood clot is carried by the bloodstream to the brain.

Warfarin, an oral drug also known by its brand name Coumadin, costs about $800 a year, compared with $10 annually for aspirin. The cost of warfarin includes the expense of monthly blood monitoring, which is necessary because a major complication of the medication is hemorrhaging.

But even with warfarin's added monitoring costs and complications, the drug still is more cost-effective than aspirin, Gage said. The study shows that during a 10-year period, warfarin saved about $6,200 for each high-risk patient in costs from stroke — more than enough to offset the additional cost of warfarin therapy vs. aspirin.

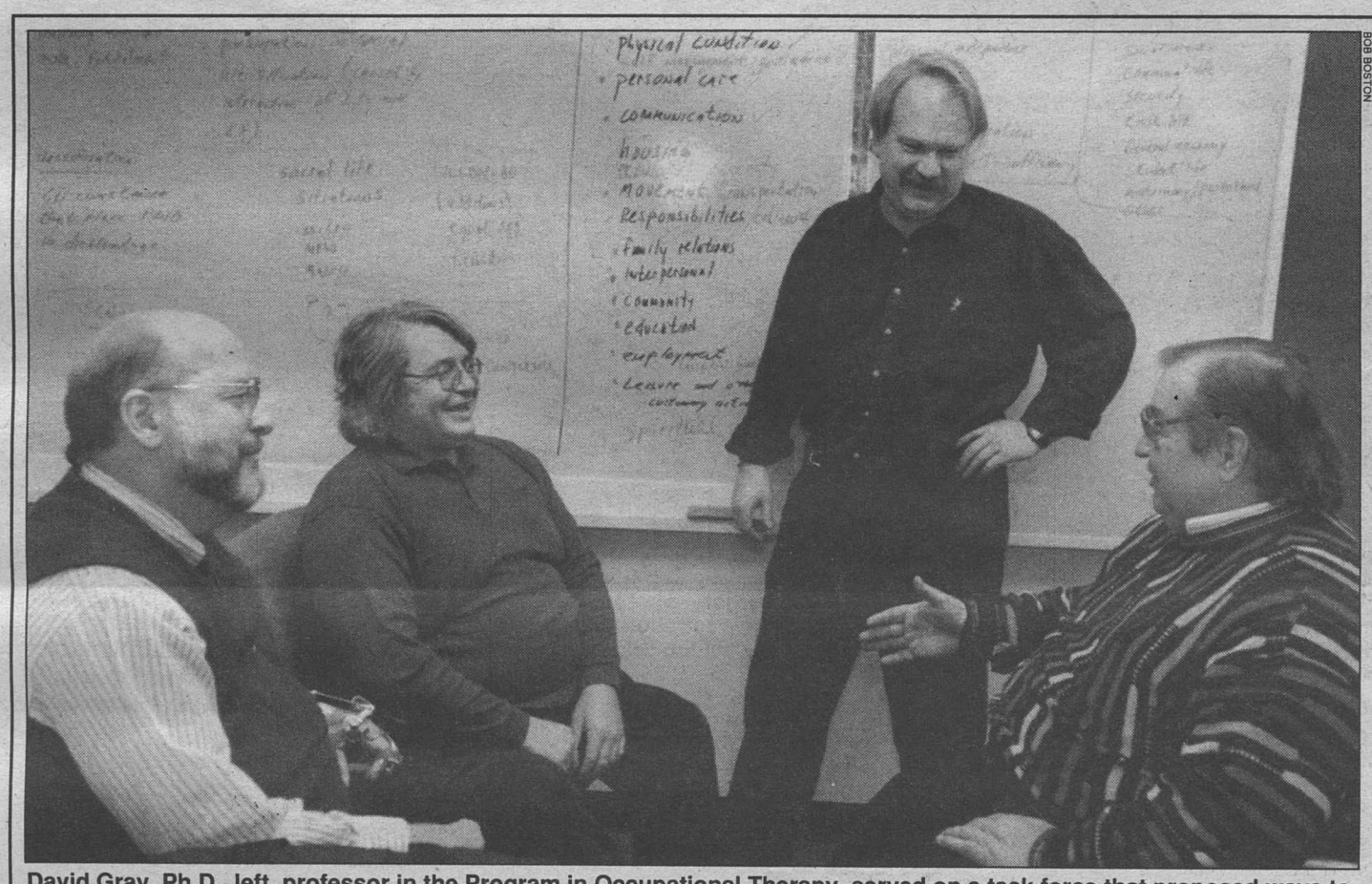
For patients at medium risk of stroke — those with atrial fibrillation and one additional risk factor — warfarin therapy also proved to be cost-effective.

However, warfarin was not cost-effective for patients with atrial fibrillation who had no additional risk factors for stroke, and it did not extend these patients' lives, the study showed. "Their risk of stroke is so low that giving them warfarin therapy doesn't really decrease that risk," Gage said. "In fact, for these low-risk patients, warfarin can be harmful because it increases the risk of brain hemorrhage."

The researchers concluded, however, that aspirin is a cost-effective and satisfactory alternative for these low-risk patients.

Gage and colleagues in the Department of Medicine plan to study whether drug therapy can restore a normal heartbeat and improve quality of life in patients with atrial fibrillation. "If the therapy works, we could reduce the rate of stroke in patients with atrial fibrillation even further," Gage said.

— Caroline Decker



David Gray, Ph.D., left, professor in the Program in Occupational Therapy, served on a task force that proposed ways to make environments more accessible to people with physical disabilities. Other task force members were, from left, Patrick Fougeyrollas, Ph.D., and Jerry Bickenbach, both representing Canada, and Harlan Hahn, Ph.D., representing the United States. Instead of classifying people by their impairments, Gray and others believe environments should be classified as to whether, for example, they have automatic doors or ramps. The task force process was sanctioned by the World Health Organization, and the task force met Jan. 16 in St. Louis.

School of Medicine appoints Chod and VanderLende

Ronald J. Chod, M.D., has been named assistant dean for clinical affairs, and Ann VanderLende has been appointed director of the Eric P. Newman Education Center. Chod also will retain his title as instructor of obstetrics and gynecology.

The appointments were announced by William A. Peck, M.D., executive vice chancellor for medical affairs and dean of the School of Medicine.

"I am most pleased that Washington University medical school and medical center have recruited these excellent professionals. Ron Chod's strong clinical background and personal skills position him well to contribute to our vital clinical planning and programming. Ann VanderLende is a fine manager who already has had a very positive impact on activities of the Eric P. Newman Education Center," Peck said.

Ronald J. Chod

In his new role, Chod will help foster partnerships between School of Medicine faculty members and community physicians. He also will assist in the development of clinical services and programs at the Washington University Medical Center. Chod will work closely with James P. Crane, M.D., associate vice chancellor and associate dean for clinical affairs.

Chod comes to the School of Medicine from BJC Health System, where he was vice president of clinical affairs. Before that appointment, he practiced obstetrics and gynecology in the St. Louis area.

Ann VanderLende

Chod earned a bachelor's degree in biology in 1978 from the University of Texas at Austin and a medical degree in 1983 from the University of Texas Southwestern Medical School in Dallas. In 1987, he completed a residency in obstetrics and gynecology at The Jewish Hospital of St. Louis. Chod is a St. Louis native.

In her new position as director of the Eric P. Newman Education Center, VanderLende will schedule and coordinate events, supervise staff, market the center and administer its annual budget. She coordinated the Dec. 1 grand opening of the newly completed center, which was established to provide continuing medical education facilities for the School of Medicine, its affiliated hospitals and the Central Institute for the Deaf.

Before joining Washington University, VanderLende was director of the St. Louis Executive Conference Center. Prior to that, she was the conference services manager of the Fetzer Center at Western Michigan University in Kalamazoo.

VanderLende received a bachelor's degree in hospitality and tourism management in 1990 from Grand Valley State University in Grand Rapids, Mich.

Volunteers needed for low-back pain study

Investigators from the Program in Physical Therapy are seeking individuals between the ages of 18 and 75 for a study on low-back pain. The goal of this study is to improve the clinical examination and treatment of individuals with low-back pain syndrome.

Individuals with and without low-back pain are eligible for the study. A clinical examination and laboratory measures of posture and movement will be conducted in about two hours at the medical center. Subjects will be reimbursed $30 for their participation.

The co-principal investigators are Linda Van Dillen, Ph.D., and Barbara J. Norton, both instructors in physical therapy.

For more information, call Mary Krupp at 286-1403.

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Record (USPS 600-430;ISSN 1043-0520), Volume 20, Number 17/Jan. 25, 1996. Published for the faculty, staff and friends of Washington University. Produced weekly during the school year, except school holidays, and monthly during June, July and August by the Office of Public Affairs, Washington University, Campus Box 1070, One Brookings Drive, St. Louis, Mo. 63130. Second-class postage paid at St. Louis, Mo.

Address changes and corrections:

Postmaster and non-employees: Send to Record, Washington University, Campus Box 1070, One Brookings Drive, St. Louis, Mo. 63130.

Hilltop Campus employees: Send to Office of Human Resources, Washington University, Campus Box 1184, One Brookings Drive, St. Louis, Mo. 63130.

Medical Campus Employees: Send to Payroll Office, Washington University, Campus Box 8017, 660 S. Euclid, St. Louis, Mo. 63110.

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Washington People

Khouri: 'architect of the human body'

Roger K. Khouri, M.D., associate professor of plastic and reconstructive surgery, could have been an architect. The son of two architects, he grew up knowing the form, function and beauty of architecture.

"What I do now is not so different," he said. "I think of myself as an architect of the human body. Every operation in reconstructive microsurgery involves planning and design. I conceptualize it based on the patient's needs and available resources and then make sure it is well executed and correctly constructed, taking into account the constraints of living tissue. It is architecture."

The role of plastic surgeons, as Khouri sees it, is to reconstruct what has been lost through trauma or illness or what never really developed at birth. "We replace missing parts with whatever tissue the patient can spare. We use the body as the bank, or the donor site, and transfer tissue from one site and ensure survival in a new area. After this autologous transplantation, we sculpt the tissue and give it a new function," he said.

His work in breast reconstruction is a perfect example. "We transfer tummy tuck tissue from the abdomen and sculpt it into a breast," he said. The procedure, called autologous reconstruction, avoids the potential shortcomings of breast implants.

"We also reconstruct missing digits with tissue transferred from the toes. We build urethras and missing penises out of tissue harvested from the arm," he said. His expertise in microsurgery is the key to making it work.

According to Khouri, microsurgery is the ultimate tool in putting the pieces together. Adequate blood supply ensures that the new parts will heal and function in their new environments. Microsurgery connects tiny blood vessels, creating a lifeline for the transplanted tissue. "We take surgical technology to the microscopic level — the smallest level we can manipulate with our hands," he said.

Microsurgery allows plastic surgeons to operate in any area of the body. "That's the beauty of plastic surgery," he said. "We operate on the entire body, from the scalp to the toes and almost everything in between."

BOB BOSTON

Roger K. Khouri, M.D., left, and Patty Young, M.D., resident in plastic surgery, photograph a patient's hand after a toe-to-finger transfer operation. These surgeries replace digits that are destroyed or lost in accidents. Plastic surgery resident E. Gene Deune, M.D., is assisting with the photographs, which will be used for training.

Bridging technology

Being able to bring different specialties together and bridge the technology from one area to another is the most exciting part of his clinical work. Khouri said the climate at Washington University is one that encourages and facilitates collaboration, not only in clinical areas but in research projects as well. "The receptiveness of various investigators here and their willingness to collaborate is something that does not happen elsewhere," he said. His research projects have involved collaborative efforts with various disciplines, including hematology, pathology and cytogenetics.

The challenge then becomes translating the research into patient care, something Khouri has been intrigued with since he was a student. During his fellowship in molecular biology, he realized his training as a physician was almost exclusively in patient care. "I felt I was at a major disadvantage to my colleagues," he said. "They were much smarter than I was in the lab. On the other hand, I had an edge over them because I knew what was clinically relevant. I knew then I wanted to bridge this gap — to be the clinician who follows up the advances of basic science to try to find new, useful clinical applications."

With this goal in mind, he is concentrating on fabricating vascularized replacement parts and organs using growth factors and genetically engineered cells. "Why can't we regenerate what is missing?" he asked. "Why not restore our ability to regenerate amputated parts like salamanders? It is all written there in the genetic code; we have to find ways of transcribing it again. The simplest organ I am called upon to reconstruct is a mound of tissue that we call a breast. Yet I have to do a relatively complex and rather aggressive operation to transfer that tissue from somewhere else. Theoretically, we should be able to induce the surrounding tissue to grow and re-create the missing mound."

He already has tested the hypothesis on bone regeneration. In a 1991 Journal of the American Medical Association article, he reported on skeletal replacement part formation using muscle flaps and growth factors. He presented more bone regeneration research at the American College of Surgeons' meeting in October. This time, using a freeze-dried joint graft as the framework, a transforming protein was added to entice the recipient cells to repopulate the muscle-and-bone construction and revive it into functioning bone and joint cartilage. "We are inducing the body to regenerate a specific part by providing the three-dimensional scaffold, the structural matrix and the appropriate signals to make a joint," he said.

> "One thing I am not short of is ideas."

Khouri will continue to test this idea and others. "One thing I am not short of is ideas," he said. "Most scientists make a career out of one good idea. I develop one, and before I become a recognized authority in that particular field, another interesting and completely new idea comes along. I have more fun exploring new territory than building an empire based on what already has been defined." In fact, Khouri has obtained three patents in the last two years, and another six are pending.

'Pushing the frontiers of microsurgery'

Khouri's colleagues give his ideas high praise. Joseph Upton III, M.D., associate professor of plastic surgery at Harvard Medical School, has known Khouri since 1981, when Khouri was a surgery resident at Brown University. "He has great ideas, and he follows up on them," Upton said. "He is pushing the frontiers of microsurgery because he is so bright and aggressive. Roger has done more good things for plastic surgery in his first eight years than many others do in their entire careers."

William Shaw, M.D., professor and chair of the Division of Plastic Surgery at the University of California, Los Angeles, calls Khouri a modern-day Don Quixote. "He's a free-spirited thinker who is not afraid to get involved in complex issues. The work he has done in tissue fabrication may change the future — not only of plastic surgery but possibly orthopaedic and general surgery as well," Shaw said.

When discussing Khouri, his colleagues also point to his inventiveness. "Our field is creative," Upton said. "We construct things. Give Roger a problem, and he'll come up with a dozen creative ideas and solutions."

Shaw agreed. "He is one of the most creative plastic surgeons I've ever seen, both clinically and in the research lab," he said.

In addition to the University's collaborative nature, Khouri credits much of his success to the Washington University/Monsanto Biomedical Research Agreement, which is headed by David M. Kipnis, M.D., Distinguished University Professor of Medicine and professor of molecular biology and pharmacology, and to Paul M. Weeks, M.D., head of the Division of Plastic and Reconstructive Surgery.

"The research agreement paves the way for taking basic technology to clinical trials," Khouri said. "And the work Kipnis has done in bringing us together has been very fruitful."

Weeks gives his faculty members the opportunities to achieve their potential, Khouri said. "Weeks is an excellent coach. He provides a nurturing environment and gives us relatively free reign to pursue our ideas," said Khouri, who joined the University in 1989. The commitment to research and academic freedom is what Khouri said allows him and others to flourish at Washington University.

Research and academics come naturally to Khouri, who grew up on the campus of the American University of Beirut, where his father was an architecture professor. "I've spent my entire life in a university setting. I used to play on the campus of a university. Then I became a student, a resident and now a faculty member," he said. "I guess I would have separation anxiety if I ever left university life."

Khouri attended a French Jesuit high school and considered studying mathematics but opted to study medicine at the American University of Beirut. "I ended up in medical school by default," he said. "It was the best university education available in Lebanon in the early 1970s, and I didn't want to leave the country at the time."

Enjoys working with his hands

While he was in medical school, a civil war broke out in Lebanon. "I found this war totally absurd," he said. "I did not want to take sides in the conflict. Although born Christian, I grew up in the Muslim part of town, and many of my friends were Muslims. I felt I couldn't stay there anymore." He graduated from medical school in 1981 and came to the United States. As a fellow in molecular biology, he knew he wanted to continue his interest in basic science research. "My temperament then led me to become a surgeon, because I like to see immediate results," he said. "Also, I enjoy working with my hands. I once built a motorcycle out of scrap parts. Constructing things, putting things together were natural to me, so surgery seemed obvious."

He toyed with the idea of becoming a heart surgeon, seeing it as the perfect mix of helping people and applying technology. But once he discovered plastic surgery, he was hooked. Khouri said, "I realized that plastic surgery is like building a new motorcycle every day." After that, he finished his training with microsurgery and hand surgery fellowships.

He remembers his training days well and said memory shapes the way he now trains residents and fellows. "Teaching residents is very exciting," he said. His satisfaction comes from seeing them perform complex operations with confidence. "I love it when they can do it better than I can," he added.

Former resident Dale Collins, M.D., now an associate professor of plastic surgery at Dartmouth Medical School, said she hears Khouri's words every day as she operates. "I understand them better as I gain more experience," she said. "Now I hear myself saying the same words to my residents."

Khouri also finds reward in clinical work. "Satisfaction as a doctor comes when I see I've really helped the patient. A lot of the time, I am dealing with quality-of-life issues. When I feel I've worked hard and possibly made a positive difference in their lives, I'm satisfied."

In terms of his research, Khouri is clear. "I run ideas by smart people, and they say, 'Well, I don't know, Roger, you always come up with crazy ideas.' I've had this comment made to me often," he said. "I love it when that idea that initially seemed so far-fetched actually works."

Khouri is married to Susana Leal-Khouri, M.D., a pathologist and dermatologist in private practice. They have four children and are expecting a fifth in April.

— Mary Carollo

Calendar

Jan. 25–Feb. 3

Exhibitions

"Versions of the Self: The Poetry of John N. Morris." A selection of books and manuscripts tracing the career of Morris, a poet and retired English professor. Through March 1. Special Collections, Olin Library, Level Five. Hours: 8:30 a.m.-5 p.m. weekdays. 935-5495.

"MetroLines: Transit Poetry From Around the World." Poems featured on the mass transit systems of several large cities worldwide will be displayed on placards at the International Writers Center. Through February. West Campus Conference Center. Hours: 8:30 a.m.-5 p.m. weekdays. 935-5576.

"Lifting the Veil: Robert S. Duncanson and the Emergence of the African-American Artist." More than 50 paintings, manuscripts, newspapers, books and drawings from all periods of Duncanson's career are assembled in a national touring exhibition. Opening reception: 6-9 p.m. Jan. 26 in the Gallery of Art, lower gallery, Steinberg Hall. Exhibit will be in the upper and lower galleries through March. Hours: 10 a.m.-5 p.m. weekdays; 1-5 p.m. weekends. 935-5490.

Films

Thursday, Jan. 25

7:30 p.m. French Film Series. "Bob Le Flambeur" (1955), with English subtitles. Room 162 McDonnell Hall. 726-1565.

Thursday, Feb. 1

7:30 p.m. French Film Series. "Les Nuits Fauves" (1993), with English subtitles. Room 162 McDonnell Hall. 726-1565.

Lectures

Thursday, Jan. 25

Noon. Vision science seminar. "Aquaporin: Family of Molecular Water Channel," Peter Agre, prof., Dept. of Biological Chemistry, Johns Hopkins U., Baltimore. East Pavilion Aud., Barnes Hospital. 362-3726.

2:30 p.m. Mechanical engineering seminar. "Applications of Smart Structures for Vibration Suppression," Daniel J. Inman, American Society of Mechanical Engineers' Distinguished Lecturer, Dept. of Engineering Mechanics, Virginia Polytechnic Institute & State U., Blacksburg. Room 101 Lopata Hall. 935-6055.

4 p.m. Assembly Series. Thomas D. Fulbright Lecture in American History. "Race and Nationality in American History: Who is an American?" Eric Foner, DeWitt Clinton Professor of History, Columbia U., and author of "Reconstruction: America's Unfinished Revolution, 1863-1877." Graham Chapel. 935-5285.

4 p.m. Chemistry seminar. "Saccharide-protein Interactions: Exploring and Exploiting Multivalency," Laura L. Kiessling, asst. prof. of chemistry, U. of Wisconsin, Madison. Room 311 McMillen Lab. (Coffee: 3:40 p.m. outside Room 311.) 935-6530.

4 p.m. Earth and planetary sciences colloquium. "Transport Processes in the Giant Planets," Tristan Guillot, Dept. of Planetary Sciences and Lunar and Planetary Laboratory, U. of Arizona, Tucson. Room 362 McDonnell Hall. 935-5610.

4 p.m. Molecular oncology/medicine/pathology seminar. "A Novel Protein Family Related to the Ubiquitin-protein Ligase E6-AP," Martin Scheffner, group leader, Division of Tumor Virus Characterization, German Cancer Research Center, Deutsches Krebsforschungszentrum, Heidelberg, Germany. Third Floor Aud., St. Louis Children's Hospital. 362-9035.

4:30 p.m. Math colloquium. Topic to be announced. K. Zhu, prof., State U. of New York, Albany. Room 199 Cupples I Hall. (Tea: 4 p.m. in Room 200.) 935-6726.

Friday, Jan. 26

9:15 a.m. Pediatric Grand Rounds. "Fetal Stem Cell Transplantation," Alan Flake, assoc. prof. of pediatric surgery, Children's Hospital of Michigan, and director of fetal surgery, Wayne State U., Detroit. Clopton Aud., 4950 Children's Place. 454-6006.

Noon. Cell biology and physiology seminar. "How Do Sex-related Genes Evolve?" Ursula W. Goodenough, prof. of biology. Room 426 McDonnell Medical Sciences Bldg. 362-6950.

Monday, Jan. 29

4 p.m. Biology seminar. "Density-dependent Consequences of Foraging Under the Threat of Predation," Bradley R. Anholt, research assoc., Zoologisches Institut, U. of Zurich, Switzerland, and ecologist candidate in the Dept. of Biology. Room 322 Rebstock Hall. 935-6860.

Tuesday, Jan. 30

9 a.m. Psychiatry lecture. Edwin T. Gildea Lecture. "Overview of Manic-depressive Illness: Diagnosis and Treatment," Kay Redfield Jamison, prof. of psychiatry, Johns Hopkins U. School of Medicine. Clopton Aud., 4950 Children's Place. 362-7772.

10 a.m. Biology seminar. "Future Work: Density-dependent Consequences of Foraging Under the Threat of Predation," Bradley R. Anholt, research assoc., Zoologisches Institut, U. of Zurich, Switzerland, and ecologist candidate in the Dept. of Biology. Room 202 Life Sciences Bldg. 935-6860.

4 p.m. Diabetes research seminar. "Autoreactive T-cell Clones From the NOD Mouse," Kathryn Haskins, assoc. prof. of immunology, U. of Colorado Health Sciences Center, Denver. Pathology Library, Room 3723 West Bldg. 362-7435.

7 p.m. Women's Midlife Fan Club seminar/discussion. "Mid-life/Mind-body Connections — Using Tai Ch'i," Harriet Entin, social worker and teacher of Tai Ch'i at Christian Northwest Hospital. Barnes West County Hospital, 12634 Olive Blvd. 362-6667.

Wednesday, Jan. 31

6:30 a.m. Anesthesiology Grand Rounds. "Jugular Bulb Monitoring — Is it Worthwhile?" Angele Theard, instructor in anesthesiology. Wohl Hospital Bldg. Aud., 4960 Children's Place. 362-6978.

8 a.m. Obstetrics and Gynecology Grand Rounds. "Chorionic Villus Sampling: A Review of Method and Controversy," Diana L. Gray, asst. prof. of obstetrics and gynecology and of radiology and director, Ultrasound/Genetics Division. Clopton Aud., 4950 Children's Place. 454-7886.

11 a.m. Assembly Series. Neureuther Library Lecture. "Parrots, the Universe and Everything," Douglas Adams, author, "Hitchhiker's Guide to the Galaxy" series. Graham Chapel. *(See story, page 5.)* 935-5285.

3:45 p.m. Physics colloquium. "The Mystery of Gamma-ray Bursts," Gerald J. Fishman, Space Sciences Laboratory, NASA/Marshall Space Flight Center. Room 201 Crow Hall. (Refreshments: 3:30 p.m. in Room 245 Compton Hall.) 935-6276.

7:30 p.m. Art lecture. Douglas Blau, New York-based teacher, artist/exhibitor and curator who also is a writer and critic. Steinberg Hall Aud. 935-6597.

Thursday, Feb. 1

9:15 a.m. Social work seminar. "Establishing a New Ethical Framework for Assisting Children: The U.N. Convention on the Rights of the Child," Felton Earls, prof. of child psychiatry, Harvard School of Public Health, Boston. Room 353 West Campus Conference Center. 935-5741.

1 p.m. Vision science seminar. "HSV Vectors for Inherited Retinal Diseases," Jay Pepose, Bernard Becker Professor of Ophthalmology and Visual Sciences and assoc. prof. of pathology. East Pavilion Aud., Barnes Hospital. 362-3726.

1:30 p.m. Vision science seminar. "Animal Model for Human CMV for Human Antiviral Testing," Jay Pepose, Bernard Becker Professor of Ophthalmology and Visual Sciences and assoc. prof. of pathology. East Pavilion Aud., Barnes Hospital. 362-3726.

4 p.m. Molecular oncology/medicine/pathology seminar. "HCF: An Unusual Nuclear Protein Required for Cell Proliferation and Transcriptional Activation by the Herpes Virus VP16 Protein," Angus Wilson, research fellow, Cold Spring Harbor Laboratory, New York. Third Floor Aud., St. Louis Children's Hospital. 362-9035.

4:15 p.m. Philosophy-neuroscience-psychology colloquium. "Emergent Computation and Representations in Dynamical Systems," Melanie Mitchell, research prof. and director, Adaptive Computation Program, Santa Fe Institute, N.M. Room 110 January Hall. 935-6670.

5 p.m. Art history and archaeology lecture. "Science, Classification and Empathy: Three Models for Landscape Painting and the Work of Gustave Courbet," Jeremy Strick, curator of modern art, Saint Louis Art Museum. Room 116 Givens Hall. 935-5287.

Friday, Feb. 2

Noon. Environmental engineering seminar. "A New Membrane Process for Removal of Trace Organics for Aqueous Solutions," Sa Ho, science fellow and unit leader, Monsanto Co. Room 216 Urbauer Hall. 935-8590.

Noon. Cell biology and physiology seminar. "Is the Lens the Ocular Equivalent of Spemann's Organizer?" David Beebe, prof. of ophthalmology and visual sciences. Room 426 McDonnell Medical Sciences Bldg. 362-6950.

4 p.m. Music lecture. "Antecedents of the Instrumental Recitative in Mozart's Piano Concerto K. 271 in E flat major, 'Jeunehomme,'" Robert Levin, noted fortepianist, Mozart scholar and prof. of performance studies at Harvard U. Seth Carlin, prof. of piano and fortepiano, will join Levin in a performance of the concerto. Both pianists will improvise cadenzas in the work. First-floor rehearsal room, Tietjens Hall. 935-5581.

6 and 8:30 p.m. WU Association Travel Lecture Series. "The Grand Canyon," Dale Johnson, award-winning filmmaker. Graham Chapel. Cost: $4.50. 935-5212.

Saturday, Feb. 3

9 a.m. Surgery lecture. "Update on Thromboembolism," Lazar J. Greenfield, Evarts A. Graham Visiting Professor of Surgery, and Frederick A. Coller Professor and chair, Dept. of Surgery, U. of Michigan, Ann Arbor. Clopton Aud., 4950 Children's Place. 362-8020.

3 p.m. Gallery talk. "Lifting the Veil," an informal presentation and discussion of the Robert S. Duncanson exhibit with Joseph Ketner, director of the Gallery of Art and organizer of the four-city Duncanson exhibit. *(See Exhibitions, this page.)* Gallery of Art, upper gallery, Steinberg Hall. 935-5490.

Performances

Friday, Jan. 26

8 p.m. WU Dance Theatre. The Performing Arts Dept. presents a showcase of student dancers performing selections choreographed by faculty and guest artists. (Also Jan. 27, same time, and Jan. 28 at 2 p.m.) Cost: $8 for the general public and $6 for senior citizens and WU students, faculty and staff. Edison Theatre. 935-5858 or 935-6543.

Saturday, Jan. 27

8 p.m. Edison Theatre's "Stage Left" series presents Guy Klucevsek, a solo classical accordionist. (Also Jan. 28 at 7 p.m.) Cost: $12 for the general public, senior citizens and WU faculty and staff and $10 for WU students. Drama Studio, Room 208 Mallinckrodt Center. 935-6543.

Thursday, Feb. 1

8 p.m. Edison Theatre's "OVATIONS!" series presents the St. Louis premiere of Guthrie Theater's "K Impressions of 'The Trial' by Franz Kafka." (Also Feb. 2, same time.) After the Feb. 2 performance, Gerald Izenberg, prof. of history, will lead a discussion about Kafka. Cost: $20 for the general public; $16 for senior citizens and WU faculty and staff; and $11 for WU students. Edison Theatre. 935-6543.

Miscellany

Saturday, Jan. 27

10-11:30 a.m. Book arts workshop. A paper and printing expo with local suppliers who will bring samples and talk about the variety of materials and processes available for making books. Cost: $5. Bixby Hall Gallery. To register, call 935-4643.

Thursday, Feb. 1

7:30 p.m. Feminist reading group. The group will discuss "Written on the Body" by Jeannette Winterston. Women's Bldg. Lounge. 935-5102.

Calendar guidelines

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

Calendar submissions should state time, date, place, sponsor, title of event, name of speaker(s) and affiliation(s), and admission cost. Quality promotional photographs with descriptions are welcome. Send items to Judy Ruhland at Campus Box 1070 (or via fax: 935-4259). Submission forms are available by calling 935-4926.

The deadline for all entries is noon Tuesday one week prior to publication. Late entries will not be printed. The Record is printed every Thursday during the school year, except holidays, and monthly during the summer. If you are uncertain about a deadline, holiday schedule, or any other information, please call 935-4926.

Blumenfeld opera to make world debut

"Seasons in Hell," the latest opera by Harold Blumenfeld, professor emeritus of music in Arts and Sciences, will make its world debut Feb. 9-11 at the Patricia Corbett Theater in Cincinnati.

The two-act opera is Blumenfeld's fifth work based on the writings of the revolutionary French poet Arthur Rimbaud. The work culminates Blumenfeld's decade-long exploration into the life, lore and works of the poet, whom many consider literature's greatest prodigy.

Blumenfeld's "Seasons in Hell," based on the title of Rimbaud's final autobiographical poem, traces the brilliant life of the radical boy poet. The opera follows Rimbaud as a precocious teen-ager determined to revolutionize French poetry to his ill-fated exploits as a fortune-hunting gun-runner in Africa.

"Seasons in Hell" is being staged by the Opera Division of the Cincinnati College-Conservatory of Music and employs a cast of 10, a full chorus, and an orchestra of 50.

A compact disc containing all five Blumenfeld works based on the writings of Rimbaud recently has been released on Centaur Records. For information on tickets and performance times of "Seasons in Hell," call (513) 556-4183.

Satirist Douglas Adams to lecture

Best-selling author Douglas Adams will give the annual Neureuther Library Lecture at 11 a.m. Wednesday, Jan. 31, in Graham Chapel. The lecture, titled "Parrots, the Universe and Everything," is part of the spring 1996 Assembly Series.

That same day, Adams also will participate in an informal discussion at 2 p.m. and a book signing from 3 to 3:30 p.m., both in the Women's Building Lounge. All events are free and open to the public.

Adams, co-founder of a new multimedia startup in Britain called The Digital Village, which creates software for television, CD-ROM and the Internet, is the author of "The Hitchhiker's Guide to the Galaxy" series and is the creator of adaptations of the series for radio, television and the stage. Since its 1978 inception as a late-night British radio show, the "Hitchhiker's Guide" has developed an international cult following.

The success of the radio shows led to the 1979 publication of the series' first book, "The Hitchhiker's Guide to the Galaxy." This was followed by "The Restaurant at the End of the Universe" (1980), "Life, the Universe and Everything" (1982), "So Long, and Thanks for All the Fish" (1984) and the most recent title in the series, "Mostly Harmless" (1993). A movie version of "The Hitchhiker's Guide" is in development.


Douglas Adams

Adams' other works include "Dirk Gently's Holistic Detective Agency" (1987) and "The Long Dark Tea Time of the Soul" (1990). He also co-wrote with zoologist Mark Cawardine the travel and wildlife book "Last Chance to See" (1990).

Adams graduated in 1974 from Cambridge University with a bachelor's degree in English literature and, prior to writing radio scripts, worked in various short-term jobs. He was a script editor for the TV series "Doctor Who" from 1978 to 1980.

The Neureuther Library Lecture is made possible through an endowed lecture fund from Washington University alumnus Carl Neureuther, an advocate of lifelong reading and the pursuit of book collecting.

For more information, call 935-5285.

University College presents short courses

University College in Arts and Sciences will present three short courses in February that focus on the painter Rembrandt, Shakespeare's "Romeo and Juliet," and the Woman Suffrage Movement.

Mark S. Weil, Ph.D., professor and chair of the Department of Art History and Archaeology in Arts and Sciences, will lead a four-session course titled "Rembrandt van Rijn, Painter of Parables." The course will examine Rembrandt's life and his message by analyzing selected paintings and prints and relating them to 17th-century Dutch life, as well as to works of art that influenced the artist. The course also will include a visit to the Gallery of Art to view and discuss Rembrandt's etchings.

The course will be held from 12:30 to 2 p.m. Mondays from Feb. 5-26.

Henry I. Schvey, Ph.D., professor of drama and of comparative literature and chair of the Performing Arts Department in Arts and Sciences, will conduct a four-session course on "'Romeo and Juliet' on its 400th Anniversary: The Creation of a Tragedy." The course will consider the various stage and filmed versions of the play — including the British Broadcasting Corp. production, the films of Franco Zeffirelli and "West Side Story" — as well as the forthcoming Performing Arts Department production scheduled for mid-April in Edison Theatre. Participants will be invited to attend a rehearsal.

This course will be held from 4 to 5:30 p.m. Wednesdays from Feb. 7-28.

Liann Tsoukas, lecturer in history in Arts and Sciences, will lead a four-session course titled "One Woman, One Vote: The Struggles of the Suffrage Movement." The course will examine the arguments, activities and organizations of the Woman Suffrage Movement, as well as the passions, convictions and persistence of the suffragists themselves.

The course will meet from 1 to 2:30 p.m. Thursdays from Feb. 8-29.

The cost of each short course is $80. (Classroom teachers taking the "Romeo and Juliet" course will be charged only $50.) Those registering for the courses will be notified as to course location.

For more information, call 935-6788.

Public space focus of Saturday seminars

University College in Arts and Sciences will conduct its 15th annual Saturday Seminar Series in February on the topic "Common Grounds: Public Space and Social Intentions."

The lectures, which feature four Washington University faculty members from different disciplines, will focus on the ways Americans define and shape public spaces — from the monumental structures in which legal affairs are conducted and records are housed to the great tracts of the country's managed "wilderness" maintained as national parks.

David T. Konig, Ph.D., professor of history in Arts and Sciences, will lead off the series on Feb. 3 with his lecture "A Space for Justice: Ideal and Nostalgia in Colonial American Courthouses." He will be followed on Feb. 10 by William R. Lowry, Ph.D., associate professor of political science in Arts and Sciences, who will speak on "National Parks as Political Goods."

The Feb. 17 lecture, titled "Public/Private Spaces in American Law," will be conducted by Stuart Banner, J.D., associate professor of law. The Feb. 24 lecture, "Great Public Spaces, Past and Present," will feature Cynthia Weese, FAIA, professor and dean of the School of Architecture.

The lectures, scheduled for 11 a.m. to 12:30 p.m., are free and open to the public. They will be held in Room 362 McDonnell Hall. Registration is not required.

For more information, call 935-6788.

Kevin Kline works with drama students — *from page 1*

ding actors to jump at every opportunity they can to perform Shakespeare, even if it means sitting around in someone's living room reading verse.

"It's a muscle that must be exercised," Kline said.

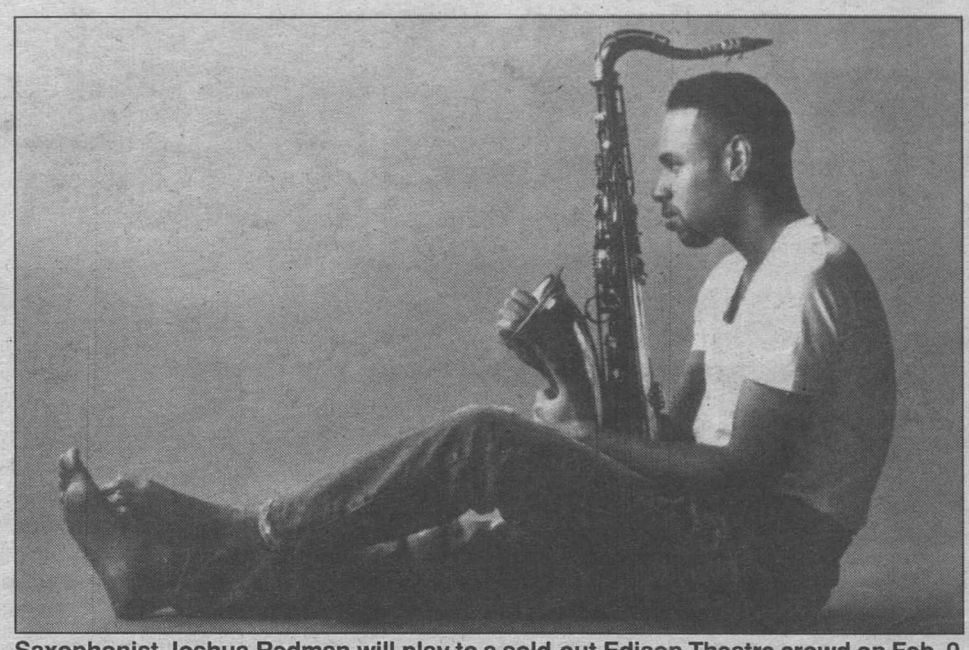
The Performing Arts Department will exercise that muscle with a production of Shakespeare's "Romeo and Juliet," scheduled for April and to be directed by Schvey.

Schvey called Kline, who has won Tony and Oscar awards for his work, "one of the best and most versatile actors of our time." Schvey said the workshop with the actor was invaluable to the students and exceeded his highest expectations.

"I thought it was inspiring," Schvey said. "It's amazing that someone with that kind of celebrity can still remain not only accessible but in touch with what makes the art form work. He is such a gifted teacher."

Junior Ben Crabtree, a 20-year-old acting major from Ladue, volunteered to work with Kline on a passage from "Romeo and Juliet." Kline repeatedly stopped the young actor, who was reciting Romeo's lines, and urged him to find the deeper meaning and feeling in the words. Afterward, flushed with excitement, Crabtree described the experience as "fantastic."

"It was an amazing opportunity to work with such a gifted, talented man," Crabtree said. "I was experiencing greatness in my chosen field." — *Neal Learner*


Saxophonist Joshua Redman will play to a sold-out Edison Theatre crowd on Feb. 9.

Jazz sensation Joshua Redman brings quintet

Joshua Redman, saxophonist supreme, brings a quintet to Washington University for a sold-out evening of original jazz, classic ballads and blues at 8 p.m. Feb. 9 in Edison Theatre.

Except for "student rush" tickets, the Redman event has sold out. "Student rush" tickets are available for purchase by students from 10 a.m. to 4 p.m. the day of the show. After 4 p.m., any remaining tickets will be available for purchase by the general public.

Redman was named 1994 "Jazz Artist of the Year" in separate critic polls conducted by Down Beat and Rolling Stone magazines. Redman's fearless improvisational skills and mature melodic sense earned him the nickname "Golden Horn" and the top prize in the 1991 Thelonious Monk International Jazz Instrumental Competition.

Redman's quintet for the Edison show includes Brian Blade on drums, Peter Bernstein on guitar and St. Louisans Peter Martin on piano and Christopher Thomas on bass. Martin and Thomas attended University City High School.

Redman's performance is part of Edison Theatre's "OVATIONS!" series. Redman and his quintet members will hold a question-and-answer session with the audience after their performance.

Tickets are $20 for the general public; $16 for senior citizens and Washington University faculty and staff; and $11 for University students. For more information, call the Edison Theatre box office at 935-6543.

Sports

Compiled by Mike Wolf, director, and David Moessner, assoc. director, sports information.

Men hoopsters finish road trip with two wins

Playing its 12th and 13th road games of the season, the men's basketball team concluded its grueling stretch of away contests with two key University Athletic Association (UAA) victories. The Bears, who have had to play 13 of their first 16 games away from the Field House, defeated Case Western Reserve University (Cleveland) 77-67 and the University of Rochester (N.Y.) 87-63 to remain in a virtual first-place UAA tie with New York University. Senior guard Gene Nolan, the UAA's career leader in three-point field goals with 133, drained 10 threes over the weekend while scoring a game-high 21 points vs. Case Western and a game-high 22 vs. Rochester.

Current record: 11-5 (5-1 UAA)

This week: 6 p.m. Friday, Jan. 26, vs. Carnegie Mellon University (Pittsburgh), Field House; 3 p.m. Sunday, Jan. 28, vs. Emory University (Atlanta), Field House; 7:30 p.m. Tuesday, Jan. 30, vs. Fontbonne College, Field House

Women's basketball ends East Coast tour

The women's basketball team ended a difficult two-weekend swing through the East Coast on a high note, coming from behind to defeat the University of Rochester 64-58 on Sunday, Jan. 21. The Bears trailed by as many as 13 points early in the second half and did not take the lead for good until the final two minutes of play. The victory followed the 70-58 conquest of Case Western Reserve University on Friday, Jan. 19. In that contest, sophomore guard Amy Schweizer netted a career-high 30 points.

Current record: 11-4 (5-1 UAA)

This week: 8 p.m. Friday, Jan. 26, vs. Carnegie Mellon University, Field House; 1 p.m. Sunday, Jan. 28, vs. Emory University, Field House; 5:30 p.m. Tuesday, Jan. 30, vs. Fontbonne College, Field House

Men's swimming team posts historic victory

The men's swimming and diving team claimed a first-ever dual meet win over nationally regarded Wabash College (Crawfordsville, Ind.) on Saturday, Jan. 20. The Bears, who jumped to 6-2 with the historic victory, prevailed by a narrow 117-114 margin. Freshman Ryan Schuenke (200-yard individual medley, 200 backstroke) and junior Mike Donnerstein (200 freestyle, 500 freestyle) each provided two individual victories, and Schuenke also handled the lead leg on the Bears' winning 400 medley relay. Also perched on the top step of the victory stand were sophomore Coe Schlicher (50 freestyle), junior Jason Price (100 freestyle) and sophomore John Durbin (200 breaststroke).

Current record: men 6-2, women 2-3

This week: 6 p.m. and 11 a.m., Friday and Saturday, Jan. 26-27, WU Invitational, Millstone Pool, Field House

Indoor track teams burst out of blocks

Jumping out of the starting blocks for the first time this season, the men and women's track and field teams both placed fifth behind a group of NCAA Division I teams at the Illinois State University Invitational, held in Normal, Ill. Highlighting the meet, the first under the tutelage of Bear coach Rich Schilling, was a school-record performance for freshman Claudine Rigaud. In her initial collegiate race, Rigaud posted a preliminary time of 7.49 seconds in the 55-meter dash to topple Tirzah Wilson's old record of 7.64 seconds. Sophomore Jeremy Dubow earned a spot on WU's all-time top-10 list with a 2 minute, 35.8 second showing in the 1,000-meter run.

This week: 11 a.m. Saturday, Jan. 27, at Eastern Illinois University Invitational, Charleston, Ill.

DAVID KILPER

The Department of Psychology in Arts and Sciences last month moved into its newly constructed building.

Roediger studies memory illusions — *from page 1*

Roediger will lead the department in these important endeavors."

A new psychology building, constructed by BSI Constructors Inc. of St. Louis, was completed on the Hilltop Campus last month.

"With the outstanding new building and the support of the administration, the psychology department is poised to make a significant move forward," said Roediger. "The existing strengths in neuroscience in the School of Medicine and the excellent program in philosophy, neuroscience and psychology (the PNP Program) will help us attract outstanding new faculty. Washington University is embarking on a program of development in my field that is quite ambitious and will be the envy of other universities. I am pleased to be joining the faculty and look forward to being chair of the Department of Psychology in these exciting times."

Roediger received a bachelor's degree in 1969 from Washington & Lee University (Lexington, Va.) and a doctorate in 1973 from Yale University. Roediger's research and teaching interests focus on human learning and memory. Some of his current experiments explore the phenomenon of memory illusions, or how and why people sometimes remember events quite differently from the way they happened. In the most dramatic cases, people can come to have vivid memories of events that never happened at all.

Author of more than 80 articles and chapters, Roediger also has written or edited five books. Three are textbooks that have each passed through four or five editions and cover the topics of introductory psychology, experimental psychology and research methods in psychology. He has extensive teaching experience at both the graduate and undergraduate levels.

Roediger has served as editor of two major psychological journals: the Journal of Experimental Psychology: Learning, Memory and Cognition and the Psychonomic Bulletin & Review. (He was the founding editor of the latter and continues to edit it.) He also has served on the editorial boards of eight other journals.

Roediger has been elected to various regional and national leadership positions in psychology, including president of the Midwestern Psychological Association and chair of the governing board of the Psychonomic Society, one of the leading organizations of experimental psychologists in the United States. He also has been elected a fellow of the American Association for the Advancement of Science, as well as three psychological organizations.

In 1994, Roediger received a Guggenheim fellowship to begin writing a book on memory illusions. His research has been funded by the National Institute of Child Health and Human Development and by the Air Force Office of Scientific Research.

— Debby Aronson

Campus Watch

The following incidents were reported to the University Police Department Jan. 13-21. Readers with information that could assist the investigation of these incidents are urged to call 935-5555. This release is provided as a public service to promote safety awareness on campus.

Jan. 12

9:29 a.m. — A staff member reported that a printer, valued at $260, was stolen from the new psychology building between Dec. 29 and Jan. 12.

10:03 a.m. — University Police responded to a minor non-injury traffic accident in a parking lot near Simon Hall.

Jan. 13

6:49 p.m. — Four students reported that jewelry items, valued at $2,100, were stolen from Chester Myers Residence Hall.

Jan. 15

5:20 p.m. — A student reported that a male subject exposed himself to her in the Law Library.

Jan. 16

10:28 a.m. — A staff member reported that 20 candy bars and $10 in cash were stolen from a Prince Hall office between Jan. 2 and 16.

7:03 p.m. — A staff member reported that a purse, valued at $125, was stolen from a desk in the Alumni House.

7:43 p.m. — A staff member reported that a purse, valued at $60, was stolen from the Alumni House dining room.

Jan. 17

10:59 a.m. — A Spann employee reported that two keys to McMillen Laboratory were stolen from Cupples I Hall between Jan. 12 and 16.

11:11 a.m. — A student reported that an electric meat slicer, valued at $700, was stolen from a fraternity house kitchen between Dec. 15 and Jan. 10.

3:15 p.m. — University Police responded to a report of a student assaulting another student in Hurd Residence Hall. One student was treated at a local hospital for facial cuts. The incident is being referred to the judicial administrator.

Jan. 19

10:46 a.m. — A staff member reported that a printer, valued at $1,500, was stolen from Brown Hall between Dec. 15 and Jan. 19.

12:11 p.m. — A student reported that a car had been damaged in a hit-and-run accident while it was parked near the Millbrook Square apartments.

6:30 p.m. — A student reported that credit cards and currency were stolen from a wallet in Givens Hall.

Jan. 20

12:51 p.m. — A student reported that a wallet was stolen from the Athletic Complex.

11:36 p.m. — A student reported that several students were putting out a fire that had been set to a bulletin board in the South 40.

University Police also received three reports of vandalized automobiles; two reports of stolen bicycles; one report of a false fire alarm at Wydown Residence Hall; and one report of vandalism to the cash machine outside Mallinckrodt Center.

University sets tuition, fees

Undergraduate tuition and fees at Washington University will total $20,200 for the 1996-97 academic year — a 4.7 percent increase above the current academic year, according to Benjamin S. Sandler, treasurer of the University. This total includes a $200 required student activity fee.

Undergraduate tuition and fees for the current academic year (1995-96) total $19,291, which includes a $191 required student activity fee.

Typical room and board charges for 1996-97 will be $6,210, up 4.2 percent from the current academic year's charges of $5,961. The total 1996-97 charge for undergraduates — tuition, fees and room and board — will be $26,410, which is 4.6 percent greater than the corresponding 1995-96 charge of $25,252.

"The increases for next year are a balance between our efforts to hold costs down and the need to provide the best possible opportunities for our students, in and out of the classroom," Sandler said. "Our tuition is competitive with institutions of our quality and size."

Washington University is committed to a strong financial aid program. Nearly 60 percent of undergraduates receive some type of financial aid.

The University offers two payment plans to help lessen families' financial burdens. The Cost Advantage Plan allows University charges for all four years (or less) to be paid in monthly installments over as many as 10 years at competitive fixed interest rates. The advantage of this plan is that a family can lessen the effect of future tuition and room and board increases, depending on the level of participation the family chooses.

The Monthly Payment Plan allows families to spread all or part of an academic year's expenses over 10 equal monthly payments without interest charges.

The following tuition charges for graduate and professional schools also were announced:

• **Graduate School of Arts and Sciences and graduate programs in the schools of Architecture, Business, and Engineering and Applied Science:** The 1996-97 tuition charge for graduate students in these programs will be $20,000, a 4.7 percent increase over the current charge of $19,100.

• **School of Art graduate programs:** The 1996-97 tuition charge for the master's of arts program will be $16,600, a 5.1 percent increase over the current charge of $15,800.

• **George Warren Brown School of Social Work graduate programs:** The 1996-97 tuition for the master's of social work program will be $16,140, a 5.1 percent increase over the current charge of $15,360.

• **School of Law:** The 1996-97 tuition for the Juris Doctor program will be $20,350, a 5 percent increase over the current charge of $19,380.

• **School of Medicine:** For medical students enrolling in fall 1996, the annual tuition charge will be $27,435. (This tuition charge will remain the same for the four years of medical school for these students.)

Business school launches TQS initiative

The John M. Olin School of Business has announced an initiative aimed at improving K-12 education in St. Louis city, county and metro-east public schools.

Through a program called Total Quality Schools (TQS), the business school will work with area public schools to improve their effectiveness by teaching the principles of Total Quality Management (TQM) to school leaders and by assisting schools in their efforts to implement these principles. With the help of 43 specially trained students from the business school and the George Warren Brown School of Social Work, seven participating schools will focus on various operational and instructional improvements specific to their schools. Participating schools may address issues such as reducing tardiness, increasing self-respect, improving security, increasing parental involvement, enhancing communication, and eliminating classroom interruptions to ensure more quality time on task.

"TQS will take Olin and George Warren Brown students into the public schools and the community and will bring modern management techniques to the public schools," said Stuart I. Greenbaum, Ph.D., dean of the business school. "The program is a win-win situation. It trains public school leaders in ways to utilize quality management techniques to identify and to address issues within the school environment. It offers Washington University students a practical consulting experience through which they can enhance their leadership, communication and presentation skills. We also hope TQS will instill in our future business and community leaders a lifelong appreciation of the need for and rewards of community service."

> "TQS will take Olin and George Warren Brown students into the public schools and the community and will bring modern management techniques to the public schools."
>
> **— Stuart I. Greenbaum**

Shanti K. Khinduka, Ph.D., dean of the social work school, said all involved will benefit from the interdisciplinary approach to problem-solving. "The increasingly complex challenges associated with education require the active involvement of professionals with varied backgrounds and expertise," he said. "TQS will foster a team approach to analysis and will encourage participants to look beyond the simple problem to issues within and outside of the school environment that are facing school children."

TQS is woven into the business school's master's of business administration and undergraduate curriculum as a three-credit course. School of social work students enrolled in TQS will earn three credits as an outside elective. The first TQS class began Jan. 16. In mid-February, after five weeks of instruction, teams of five to six students will begin consulting in area schools. While the Washington University students are being trained, principals, teachers and parents from the seven participating schools will undergo an intensive weeklong learning experience designed to impart the principles of TQM, including continuous process improvement, leadership and empowerment, and effecting cultural change.

St. Louis-area schools that will participate in the initial TQS program are: Continued Education High School and Sigel Elementary Community Education Center in the St. Louis Public School District; Washington School in the Normandy School District; Ronald E. McNair Sixth Grade Center and Jackson Park School in the School District of University City; Curtis Bishop Middle School in the Wellston School District; and Venice High School in Illinois District No. 3.

The business school anticipates that more public schools will be added to the TQS program next year.

E. Desmond Lee, a St. Louis philanthropist who is dedicated to the betterment of education in the St. Louis area, provided the seed capital for TQS.

"The Olin school is deeply grateful to E. Desmond Lee, The Webb Foundation and A.G. Edwards & Sons Inc. for their support of TQS," said Greenbaum.

The original version of TQS was designed by principals of the Chicago Public Schools, business executives, and faculty at the J.L. Kellogg Graduate School of Management at Northwestern University. Greenbaum was involved in the development and implementation of TQS at Northwestern, where he served as Norman Strunk Distinguished Professor of Financial Institutions.

For more information, call 935-4214.

— Rozanne Kennedy

Introducing new faculty members

Hilltop Campus

Rebecca Messbarger, Ph.D., assistant professor of Romance languages and literatures in Arts and Sciences, comes from the University of Maryland in College Park, where she was a lecturer in Italian. Among her research interests are 18th-century Italian public discourse and gender studies. She received a bachelor's degree, cum laude, in English literature in 1983 from Loyola University in Chicago, a master's degree in Italian literature in 1986 from the University of Wisconsin in Madison, and a doctorate, with honors, in Romance languages and literatures in 1994 from the University of Chicago.

Robert Pollak, Ph.D., Hernreich Distinguished Professor of Economics in Arts and Sciences and in the John M. Olin School of Business, comes from the University of Pennsylvania, where he was the Charles and William Day Professor of Economics and Social Science. His research interests include environmental policy and demography. Pollak received a bachelor's degree in history in 1960 from Amherst College in Massachusetts and a doctorate in economics in 1964 from the Massachusetts Institute of Technology in Cambridge.

Eyal Winter, Ph.D., associate professor of economics in Arts and Sciences, comes from the Hebrew University of Jerusalem, where he was a lecturer in the Department of Economics. Among his research interests are microeconomic theory and political economy. Winter received a bachelor's degree in mathematics and economics in 1983 and a doctorate in game theory in 1988, both from Hebrew University.

Medical Campus

Kerry Kornfeld, M.D., Ph.D., assistant professor of molecular biology and pharmacology, comes from the Massachusetts Institute of Technology in Cambridge, where he was a postdoctoral fellow in biology. Using a simple animal, he studies how cells communicate with each other during development. Kornfeld received a bachelor's degree in molecular biophysics and biochemistry in 1984 from Yale University and a medical degree and doctorate in biochemistry in 1991 from Stanford University in California.

Paul A. Robiolio, M.D., assistant professor of medicine, comes from the Duke University Medical Center in Durham, N.C., where he completed a cardiology fellowship. His research focuses on valvular heart disease. He received a bachelor's degree in biology in 1983 from Haverford College in Pennsylvania, a master's degree in biochemistry in 1985 from Cambridge University in England, and a medical degree in 1989 from the Washington University School of Medicine.

For The Record

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

Of note

Steven M. Cohn, M.D., Ph.D., assistant professor of medicine, received a $787,363 four-year grant from the National Institute of Diabetes and Digestive and Kidney Diseases for a project titled "Fibroblast Growth Factors in Inflammatory Bowel Disease." …

Wayne C. Drevets, M.D., assistant professor of psychiatry and of radiology at the School of Medicine's Mallinckrodt Institute of Radiology, received a $539,195 five-year grant from the National Institute of Mental Health for a project on "PET (positron emission tomography) and the Functional Anatomy of Unipolar Depression." …

Charles L. Leven, Ph.D., professor emeritus of economics in Arts and Sciences, received the Walter Isard Award for Distinguished Scholarly Achievement from the Regional Science Association's North American Council. In addition, he served as a professor-in-residence at Technion-The Israel Institute of Technology's School of Architecture and Planning in Haifa, Israel. …

Pamela A. Madden, Ph.D., research instructor in psychiatry, received a $510,427 five-year grant from the National Institute on Drug Abuse for a project on "The Genetics of Smoking in Women." …

Christine O'Neal, artist-in-residence in performing arts in Arts and Sciences, was featured as a choreographer during a program sponsored by The Center of Contemporary Arts (COCA) in University City. The program aired on the city's cable-TV station. In addition, dancers from the Webster University Dance Theatre performed O'Neal's work at a COCA dance concert, which was favorably reviewed in the St. Louis Post-Dispatch. She also appeared on a Channel 10 cable program titled "Is It Art?" …

Lee Ratner, M.D., Ph.D., professor of medicine and of molecular microbiology, received a $582,942 three-year grant from the National Cancer Institute for a project titled "Proliferative Effects of HTLV1." …

David J. States, M.D., Ph.D., associate professor and director of the Institute for Biomedical Computing and associate professor of genetics and of biochemistry and molecular biophysics, received an $877,480 three-year grant from the National Center for Human Genome Research for a project titled "Information Systems for Very High Throughput Sequencing."

Speaking of

Udo Kultermann, Ph.D., Ruth and Norman Moore Professor Emeritus of Architecture, spoke during the opening of the "Zero Italy" exhibition at the Gallery of Art in Esslingen, Germany. His essay on "The New Conception in Art" will be featured in the exhibition's 240-page catalog. …

Curtis J. Milhaupt, J.D., associate professor of law, presented a paper in Japanese on "The Lawyer's Role in Business Transactions: Japan and the United States in Comparative Perspective" at a conference in Tokyo sponsored by the Japan-America Society for Legal Studies. The paper is scheduled to be published in the Amerikaho (American Law) journal this year.

On assignment

Enola K. Proctor, Ph.D., Frank Bruno Professor of Social Work Research, is working with scientists and administrators from the National Institutes of Health (NIH) to assess NIH funding for research in the behavioral and social sciences. Proctor is helping to develop a standard definition for behavioral and social sciences research, which will be used to analyze NIH funding and to establish goals of the institute's new Office of Behavioral and Social Sciences Research. …

Deborah Shure, M.D., associate professor of medicine, was inaugurated as president of the American College of Chest Physicians, a 16,000-member international medical society. She is the first woman to hold the position. Shure was inaugurated during the college's 61st annual international scientific assembly in New York. The college promotes the prevention and treatment of diseases of the chest through leadership, education, research and communication. …

During the International Association of Chiefs of Police's annual section meeting in Miami, **William F. Taylor**, director of the Washington University Police Department, was elected the general chairperson of the association's college and university police section. The association is the largest organization of law enforcement managers in the world. More than 11,000 delegates attended the conference in Miami. …

Leila Sadat Wexler, LL.M., associate professor of law, was Washington University's representative during the American Society of Comparative Law meeting at the St. John's University law school in New York.

To press

Randy L. Korotev, Ph.D., research associate professor of earth and planetary sciences in Arts and Sciences, is one of five authors of a book titled "Birds of the St. Louis Area: Where and When to Find Them" published by the Webster Groves Nature Study Society.

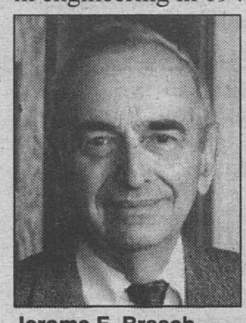
Guidelines for submitting copy:

Send your full name, complete title, department, phone number, and highest-earned degree, along with a typed description of your noteworthy activity, to For The Record, c/o Carolyn Sanford, Campus Box 1070, or p72245cs@wuvmd.wustl.edu. Items must not exceed 75 words. For information, call Sanford at 935-5293.

Alumnus Jerome F. Brasch elected to Board of Trustees

Washington University alumnus Jerome F. Brasch, president of Brasch Manufacturing Co. Inc., has been elected to a four-year term on the University's Board of Trustees.

Brasch received a bachelor's degree in engineering in 1944 and a master's degree in the same field in 1947. While working as an engineer, he taught mathematics at University College in Arts and Sciences for 20 years.



Jerome F. Brasch

Brasch, who received Washington University's Distinguished Alumni Award and its Engineering Achievement Award, has served as chairman of the Engineering Scholarship Committee. He chairs the Planned Giving Committee. For 20 years, he has provided several student scholarships, including an endowed one: the Norvell Brasch Memorial Scholarship in honor of his brother, who died at 38.

Brasch also served as chair of the Alumni Board of Governors. In his capacity as an executive officer of the Alumni Board of Governors, he served as alumni representative to the Board of Trustees from 1990-92. Today, he serves on the board's buildings and grounds committee, which oversees new construction on the University's Hilltop and Medical campuses.

In 1964, Brasch founded Brasch Manufacturing Co. Inc., a manufacturer of electric space-heating equipment and gas sensors. In 1981, the company purchased Marcraft, a manufacturer of custom-engineered heating, ventilation and air-conditioning equipment. He serves as president of both companies, which are located in Maryland Heights.

Brasch is active in the St. Louis community. He was president of the St. Louis Electrical Board from 1984-85, president of the United Hebrew Congregation in St. Louis from 1986-88, and president of the St. Louis chapter of the American Society for Technion from 1990-91.

He now serves as treasurer of Horizon Graphics Inc. and previously served on the boards of directors of the North St. Louis Trust Co., International Management Services Inc., and Metropolitan Employment and Rehabilitation Services.

Obituaries

Anne Fuller Dillon, director of media services

Anne Fuller Dillon, director of media services for the Washington University School of Medicine, died of cancer Jan. 14 at her University City home. She was 57.

Dillon joined Washington University in 1987 as director of the school's Computer Graphics Center. She was promoted to director of media services in 1990. In 1994, she organized the first School of Medicine Faculty/Spouse Art Show, which last year was renamed the Anne F. Dillon Faculty/Family Art Show. From 1974 to 1987, she free-lanced as an artist and medical illustrator for the school.

Dillon is survived by her husband, P. McNeer Dillon of University City.

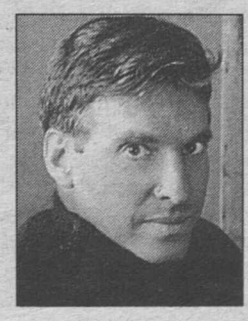
A memorial service was held on Saturday, Jan. 20, in Graham Chapel. Donations may be made to the Anne Fuller Dillon Prize in Graphic Communications, c/o Dean Joe Deal, Washington University School of Art, Campus Box 1031, 1 Brookings Drive, St. Louis, MO, 63130.

Catherine Lewis, former assistant dean of women

Catherine Woermann Lewis, assistant dean of women from 1943 to 1959, died Jan. 1 of infirmities in the St. Louis home built by her father in 1918. She turned 90 on Dec. 29. She received a master's degree in English in Arts and Sciences in 1944 from Washington University. Memorial contributions may be made to the Women's Ministries of Central Presbyterian Church, 7700 Davis Drive, St. Louis, MO, 63105, or to the School of Engineering and Applied Science or the School of Art.

Campus Authors

The following is a recent release available at the Campus Bookstore in Mallinckrodt Center on the Hilltop Campus or at the Washington University Medical Bookstore in the Olin Residence Hall. For more information, call 935-5500 (Hilltop Campus) or 362-3240 (School of Medicine).



"Tales Out of School" is the title of a novel by **Benjamin Taylor**, Ph.D., adjunct associate professor of English in Arts and Sciences. "Tales Out of School" is the story of the Mehmels, privileged and eccentric and headed into shipwreck, and of 14-year-old Felix, last of their line who takes his rise from the family ruin. The place is Galveston Island, Texas. The season is summer. The year is 1907. Among the crowd of memorable characters are Lucy Pumphrey Mehmel, Felix's mother, a woman torn between the Catholicism into which she was born and the Judaism into which she has married; Leo Mehmel, Felix's bachelor uncle, amateur ornithologist and spendthrift of a rapidly dwindling inheritance; and, catalyst to them all, Yankel Schmulowicz, the uncanny stranger who turns up in Galveston to ply his mysteries, leaving nothing as it was before he came. (Turtle Point Press, New York)

Opportunities & personnel news

Hilltop Campus

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

CFU Accountant 960115. *Accounting Services.* Requirements: bachelor's degree in accounting and/or a certified public accountant; master's degree in business administration is a plus; three to five years of accounting experience; cost accounting or construction or real estate management accounting experience preferred; fund accounting experience is a plus; an analytical mind with a high degree of intelligence and the ability to "think on his/her feet"; experience working with PCs and proficiency in spreadsheet software; experience with word processing and database-management software, preferably FOCUS, is a plus; excellent interpersonal skills; service-oriented; team player. Application required.

PC Support Technician 960120. *School of Law.* Requirements: certificate or associate's degree; extensive experience with IBM mainboards, add-on cards, hard disk drives and communication hardware and software; some network experience helpful; experience with a variety of PC-based software, specifically WordPerfect, Windows, spreadsheets, scanning OCR and databases; strong DOS and Windows background; ability to stay on track regardless of interruption and do so without prompting; ability to work independently for long periods; excellent verbal communication skills. Application required.

Senior Project Leader 960130. *Computing and Communications.* Requirements: high school education, some college; five years data-processing experience; proven ability to design, program and install major data-processing systems; proven ability to design, write and install Mantis and COBOL; IBM mainframe and PC experience preferred; willingness to work the night shift. Application required.

Funding and Development Assistant 960131. *Consortium for Graduate Study in Management.* Requirements: bachelor's degree; two or more years full- or part-time office experience; computer knowledge; experience with WordPerfect, Alphafour, Access and Lotus 1-2-3 preferred; excellent verbal and written communication skills; excellent customer-service skills; ability to conduct research for potential corporate sponsors; willingness to work as a team member and assist in other areas as the need arises; detail-oriented; typing 35-40 wpm with accuracy. Application required.

Departmental Secretary 960140. *Alumni and Development Programs.* Requirements: high school education; strong background in PCs; experience with Microsoft Word preferred; pleasant, professional manner with co-workers, volunteers and vendors; ability to handle multiple tasks in an organized, accurate and timely manner; excellent verbal and written skills; willingness to work extra hours if necessary. Application required.

Sales Associate 960142. *Campus Stores.* Requirements: high school education; good customer-relation skills; ability to stand, lift and display merchandise; organizational skills; flexibility; cashiering experience; willingness to work evenings and weekends. Application required.

Clerical Assistant 960145. *Campus Stores.* Requirements: high school graduate; ability to work with the public; pleasant manner; good grooming; ability to get along well with others; good attendance record; general office experience; organizational skills; ability to work within many diverse departments. Application required.

Manager, Systems Support and Development 960146. *Office of Residential Computing.* Requirements: bachelor's degree; working knowledge of LAN, Unix, TCP/IP and Appletalk; World Wide Web experience; experience installing, maintaining and providing support for LANs; systems experience with PCs and Macintosh computers. Application required.

Assistant Registrar 960147. *College of Arts and Sciences.* Requirements: high school graduate, some college; strong organizational skills; ability to maintain confidentiality; ability to work on a team. Application required.

Support Center Representative 960148. *Accounting Services.* Requirements: high school graduate, some college; two to three years experience on Bell & Howell ABR 100 microfilmers, Pitney Bowes 6100 mail machines and IBM 3812 laser printers; one to two years working knowledge of PCs and the software that runs them: operating systems, databases, spreadsheets and word processing; experience with a variety of software, including WordPerfect, Lotus, Excel and Word; strong organizational, verbal and alpha-numeric skills; good judgment; service-oriented; ability to perform light lifting; ability to participate on teams. Application required.

Administrative Assistant 960150. *Department of Education.* This is a temporary (one-year) assignment. Requirement: certificate or associate's degree. Application required.

Administrative Assistant to Associate Dean and Director of Ext. Affairs 960153. *School of Law.* Requirements: high school graduate, some college preferred; experience with Windows-based word processing, mail merges and e-mail; experience with Aldus Pagemaker, graphics presentation and WordPerfect software experience preferred; good spelling, grammar and punctuation skills; good filing, organizational and coordination skills; ability to handle multiple priorities; ability to communicate well with others, including administrators, faculty and other departments. Application required.

Senior Project Engineer 960154. *Electric Power Research Institute Accounting.* Requirements: bachelor's degree; five years experience in management of water/wastewater treatment; experience in research. Application required.

Assistant Operations Manager-Quad Shop/Evening Supervisor 960155. *Campus Stores.* Requirements: high school graduate with some college; ability to communicate with staff members to accomplish adequate sales floor coverage; ability to motivate workers; ability to supervise and direct staff members; ability to communicate with buyers to predict workloads and plan accordingly (stock room preparation, special functions, displays, promotions, etc.); ability to work under hectic conditions; supervisory experience. Application required.

Intern 960157. *Student Affairs.* Requirements: interest in the profession of student affairs. Application required.

Assistant Director, John M. Olin School of Business 960158. *Alumni and Development Programs.* Requirements: bachelor's degree; three years of development or related experience; familiarity with the general corporate community; excellent verbal and written communication skills; excellent program and event-management skills; ability to effectively use computer technology; ability to work effectively with diverse constituents; demonstrated interest in meeting new people; ability to think strategically and plan and implement effective development programs. This is a part-time position. Application required.

Software Specialist 960159. *The Software Library.* Requirements: bachelor's degree, business background preferred; experience in customer relations and/or service organizations; demonstrated ability to use office automation and Internet tools; ability to manage technical information and provide services in a multiplatform and multivendor computing environment; excellent interpersonal, communication and organizational skills; attention to detail. Application required.

Department Secretary 960162. *Alumni and Development Programs.* Requirements: high school graduate with some college; specialized secretarial and business training; three years general office experience, including word processing experience; strong verbal and written skills; pleasant, professional manner with co-workers, volunteers and outside vendors; strong organizational skills and ability to apply these skills toward accomplishing multiple priorities with minimal supervision; willingness to work overtime as necessary. Application required.

Research Technician 960163. *Department of Biology.* Requirements: bachelor's degree. Use of calculators and safe handling of biohazardous materials required. Application required.

Assistant to the Vice Chancellor for Financial Operations 960167. *Financial Operations.* Requirements: bachelor's degree in accounting and a certified public accountant; a master's degree in business administration is a plus; 10 years accounting experience, including five years in financial analysis or special projects; strong analytical skills; problem-solving and decision-making capability to properly assess pertinent data and develop a framework for effective practical solutions to complex issues; experience working with LANs and PCs; ability to extract data and write reports using FOCUS or its equivalent; experience with spreadsheet and database-management software applications, etc.; excellent interpersonal skills; service-oriented communicator who is accessible and a team player; initiative. Application required.

Medical Campus

The following is a partial list of positions available at the School of Medicine. Employees who are interested in submitting a transfer request should contact the Human Resources Department of the medical school at 362-7197 to request an application. External candidates may call 362-7195 for information regarding application procedures or may submit a résumé to the human resources office located at 4480 Clayton Ave., Campus Box 8002, St. Louis, MO, 63110. Please note that the medical school does not disclose salary information for vacancies, and the office strongly discourages inquiries to departments other than human resources.

Statistical Data Analyst 960216-R. *Ophthalmology.* Requirements: master's degree in biostatistics, Ph.D. preferred; training and experience in SAS programming; experience with large longitudinal datasets from multicenter studies preferred.

Medical Transcriptionist 960319-R. *Gastroenterology.* Requirements: high school graduate or equivalent; proficiency with medical terminology; organizational and computer skills; ability to work with limited supervision; typing 65-70 wpm.

Statistical Data Analyst 960420-R. *Psychiatry.* Requirements: master's degree, Ph.D. in mathematics, biostatistics or statistics preferred; two to three years research experience preferred; statistical computing, designing, coding and management of large-scale biomedical databases; fluency in SAS, Dbase or other relational systems.

Secretary 960423-R. *Psychiatry.* Requirements: effective proofreading, communication and grammar skills; WordPerfect knowledge; three to five years experience. Responsibilities include assisting physician with editing, assembling and typing a publication for the Academy of Child Psychiatry.

User Support Technician 960436-R. *Medical Computing Services.* Requirements: associate's degree or two years technical training in a related field; three years industry experience or combination of training and experience; experience with DOS, Windows, Macros and office-support software packages; working knowledge of multiplatform networking, Unix systems, e-mail, hardware and printers, modems and Internet utilities.

Pharmacy Technician 960477-R. *Barnard Cancer Center.* Requirements: two years pharmacy training or experience. Position is on an as-needed basis.

Research Associate 960517-R. *Gastroenterology* Requirements: master's degree, Ph.D. preferred. Responsibilities include studying vitamin A binding proteins, purifying proteins and assisting with lab maintenance.

Clinical Lab Technician 960555-R. *Obstetrics and Gynecology.* Requirements: equivalent of a bachelor's degree in biology or related sciences; some tissue culture experience preferred; working knowledge of chromosome identification, in situ hybridization and basic cytogenetic techniques; effective communication skills.

IBC I/Floater 960560-R. *Obstetrics and Gynecology.* Requirements: high school graduate or equivalent; medical office or insurance billing and coding experience preferred. Responsibilities include daily posting, review and balance of charges for department services.

Research Patient Assistant 960564-R. *General Internal Medicine.* Requirements: bachelor's degree, master's degree preferred. Responsibilities: literature review; data entry; data analysis; manuscript and grant preparation; interview patients; provide secretarial assistance; participate in clinical anticoagulation research, pharmacodynamics and pharmacokinetics of warfarin or Heparin (monitoring blood glucose of warfarin therapy using fingerstick system); elementary biostatistics and cost-effectiveness analysis. (Students enrolled in clinical programs are encouraged to apply if they have no research experience.)

Vice chancellor search begins — *from page 1*

cine and professor of molecular microbiology; Jeffrey I. Gordon, M.D., Alumni Professor and head of the Department of Molecular Biology and Pharmacology and professor of medicine; Ronald S. Indeck, Ph.D., professor of electrical engineering; James G. Miller, Ph.D., professor of physics in Arts and Sciences; Marilyn J. Siegel, M.D., professor of radiology and of pediatrics; Jonathan S. Turner, Ph.D., Henry Edwin Sever Professor of Engineering and chair of the Department of Computer Science; and Karen L. Wooley, Ph.D., assistant professor of chemistry in Arts and Sciences.

Wrighton has encouraged the advisory committee to make a special effort in searching for outstanding candidates who are women and minorities. He has advised the committee to search both within and outside the Washington University community. The committee is to provide Wrighton with a list of three to five viable candidates, who then will be interviewed by Christopher I. Byrnes, Ph.D., dean of the School of Engineering and Applied Science; Edward S. Macias, Ph.D., executive vice chancellor and dean of Arts and Sciences; William A. Peck, M.D., executive vice chancellor for medical affairs and dean of the School of Medicine; and Wrighton.

As a member of the University Council, the vice chancellor for research will have Universitywide responsibilities, participating in broad policy discussions affecting all aspects of the University. The vice chancellor will be one of the University's corporate officers. All corporate officers require initial appointment and annual reappointment by the Board of Trustees, following recommendation of appointment by the chancellor. Such an appointment, initially, also will require approval by the Faculty Senate Council. Recruiting an individual from outside the University could require a faculty appointment with tenure, and the policies and procedures accompanying such appointments will be followed.

Experiment to answer galactic questions — *from page 1*

sensors and three monitoring instruments that will sample low-energy particles of solar origin and high-energy galactic particles, with a collecting power 10 to 1,000 times greater than previous experiments. It will be launched into an orbit that takes it outside of our magnetosphere, allowing the charged particles to be detected unimpeded by Earth's magnetic field.

The part of CRIS that the cosmic ray group developed is called SOFT, which stands for Scintillating Optical Fiber Trajectory detector. It is about the size of a large sheet cake and has a price tag of $2.4 million. Binns said his group began working on the instrument design about four years ago and began the development of the flight instrument in January 1994.

The detector is made up of more than 10,000 scintillating fibers that are only 0.2 millimeters in width — similar in width to thread. Made of polystyrene with scintillation dyes mixed in, the fibers were fabricated in a unique fiber-development laboratory at the McDonnell Center. They are arranged in four planes. When a particle penetrates each fiber, a burst of light is emitted, and some of it is light-piped down the fiber to a highly sensitive video camera. This information can be used to trace the path of the particle and is combined with signals from silicon detectors in the other half of CRIS to measure the particle's mass, charge and energy.

Binns, who said the detector will collect about one particle a second, estimates that about 200 million particles of this high-energy galactic matter will be collected during the hoped-for five-year lifetime of the ACE mission.

The video data will be fed into an onboard data-acquisition system, which will relay the information to a receiving station on Earth.

Binns said the goal of the experiment is to measure the relative abundances of cosmic ray isotopes and to use these measurements to answer such questions as: Where do they come from (supernovae, stellar winds from massive stars, interstellar dust and gas)? How are they accelerated? What happens to them from the time they are created until they are detected at Earth?

"The CRIS measurements can be expected to firmly establish these galactic cosmic ray abundances and will enable us to test models that address these questions," said Binns, who is a co-investigator on the ACE science team.

In addition to Binns, other group members playing key roles in the instrument development are: Dana L. Braun, mechanical technician; Paul F. Dowkontt, electronics engineer; John W. Epstein, mechanical engineer; Paul L. Hink, Ph.D., research assistant professor in physics; Joseph Klarmann, Ph.D., professor of physics; Martin A. Olevitch, senior programmer analyst; and Garry E. Simburger, electronics technician. Also working at the University on the CRIS project were James Cravens, an independent consultant for quality assurance, and Bruce Williams, a thermal engineer from Johns Hopkins University's Applied Physics Lab.

— Susan Killenberg