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# Washington University Record, September 23, 1999

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# Record

Sept. 23, 1999

Volume 24 No. 5



## Washington University in St. Louis



Muthanna H. Al-Dahhan, Ph.D., assistant professor of chemical engineering and associate director of the Chemical Reaction Engineering Laboratory, inspects a slurry bubble column reactor, the reactor of choice for a wide range of industrial processes, including ways to produce alternative fuels from coal.

## Hope for Midwest's coal fields Grant funds research into alternative fuels

By TONY FITZPATRICK

An effort to find ways to produce alternative fuels from one of our region's most abundant resources — coal — has received \$548,485 in funding support from the U.S. Department of Energy (DOE).

Muthanna H. Al-Dahhan, Ph.D., assistant professor of chemical engineering and associate director of the University's Chemical Reaction Engineering Laboratory (CREL), won the three-year grant from the DOE's Federal Energy Technology Center for a proposal titled "Advanced Diagnostic Techniques for Three-Phase Slurry Bubble Column Reactors."

Al-Dahhan will collaborate with Milorad P. Dudukovic, Ph.D., the Laura and William Jens Professor and chair of chemical engineering; L.-S. Fan, Ph.D., Distinguished Professor and chair of chemical engineering at Ohio State University; and Bernard A. Toseland, Ph.D., of Air Products and Chemicals Inc., to develop and implement specialized diagnostic techniques at CREL and at Ohio State's Industrial Fluidization Laboratory.

Slurry bubble column reactors are cylindrical vessels in which gas containing one or more reactants — for example, synthesis gas — is mixed with liquid reactants and products and a finely dispersed catalyst.

They are reactors of choice for a wide range of industrial processes, in particular for the conversion of synthesis gas, a carbon monoxide and hydrogen mixture, to fuels and chemicals by processes called Fischer-Tropsch (FT) reactions. FT is an acknowledged route for clean use of coal-derived carbon monoxide and hydrogen gases.

The diagnostic techniques

Al-Dahhan and his colleagues are using will advance the knowledge and understanding of slurry bubble column reactors under FT reaction conditions and generate a new approach for scale-up and design of these reactors.

Illinois alone mines over 47 million tons of coal annually and ranks sixth among coal-producing states. Yet the bituminous or "soft" coal found in Illinois, Missouri, Kentucky and Indiana is notorious for its production of sulfur, a major pollutant. The coal mining industry and coal-mining jobs in the Midwest and mid-South, accordingly, have suffered in recent years because of environmental restrictions and reduced market demand.

There are techniques for sulfur

removal that can be used when synthesis gas is produced from coal. If synthesis gas could be converted to fuel economically, the conversion process would boost both clean synthesis gas production from coal and the coal mining industry. One promising route is FT synthesis.

"The funding received from DOE and the international consortium will be utilized to characterize properly the fluid dynamic and transport parameters via advanced diagnostic techniques available in CREL and to generate a new fundamentally based approach for scale-up, design and operation of high pressure slurry bubble column reactors with immediate application to FT synthesis," Al-Dahhan said.

See Coal, page 2

## Japanese visitors seek help with child abuse prevention

By GERRY EVERDING

Seven delegates from Japanese social service agencies and government health ministries visited the George Warren Brown School of Social Work last week to learn more about how child abuse and related problems are handled in America.

Spurred by a growing recognition of child abuse as a serious problem in Japan, the visit brought representatives of various Japanese agencies and organizations to St. Louis for a three-day program that included visits with local nonprofit and governmental children's services agencies, a day

of short seminars with social work faculty and meetings with Missouri state social services officials.

Among the delegates was Yasuo Matsubara, a professor at Meijigakuin University in Tokyo, who was a research fellow at Washington University in 1987. Matsubara said there have been reports of a significant increase in child abuse and neglect cases in Japan, attributable in part to a weakened economy that is destabilizing the family.

Arlene Stiffman, Ph.D., professor of social work and a lead organizer of their time here,

See Visitors, page 5

## Paper NSF grant proposals soon to be thing of the past

The National Science Foundation (NSF), a principal source of research funding, has made rapid progress toward electronic administration of grants with the Web-based system Fastlane, and in fact researchers will have to submit all progress and final reports via Fastlane by Oct. 1,

according to Theodore J. Cicero, vice chancellor for research.

Cicero's office has notified all deans, directors and department heads that as of Oct. 1 no paper versions of these reports will be accepted at NSF. Researchers must be

See Fastlane, page 2

## Hands-on Undergrads get research experience

By TONY FITZPATRICK

Thirty-five undergraduate biology students and their faculty mentors met Saturday, Sept. 18, on the third floor of McDonnell Hall to report the results of their summer research, giving presentations on topics ranging from the intricacies of neuroscience to the genetics of fruit flies and algae to lizard morphology.

The opportunity to do research was made possible by the Howard Hughes Medical Institute's (HHMI) Summer Undergraduate Research Program, which awards qualified students \$2,900 plus a housing allowance for 10 weeks' intensive laboratory research. Washington University has received HHMI grants since 1993 to operate this program, and over that time 297 students have been HHMI Summer Undergraduate Research fellows.

Students gave both poster sessions and formal presentations on their work. In many instances, the presentations were the first that the students, ranging from sophomores to seniors, have ever given. Chancellor Mark S. Wrighton addressed the group, and Barbara A. Schaal, Ph.D., professor of biology and newly elected fellow of the National Academy of Sciences, gave the keynote address, titled "Biodiversity in the Orphan Crop, Cassava: Basic and Applied Research."

Four individuals whose work is particularly outstanding will present their summer research results at national meetings.

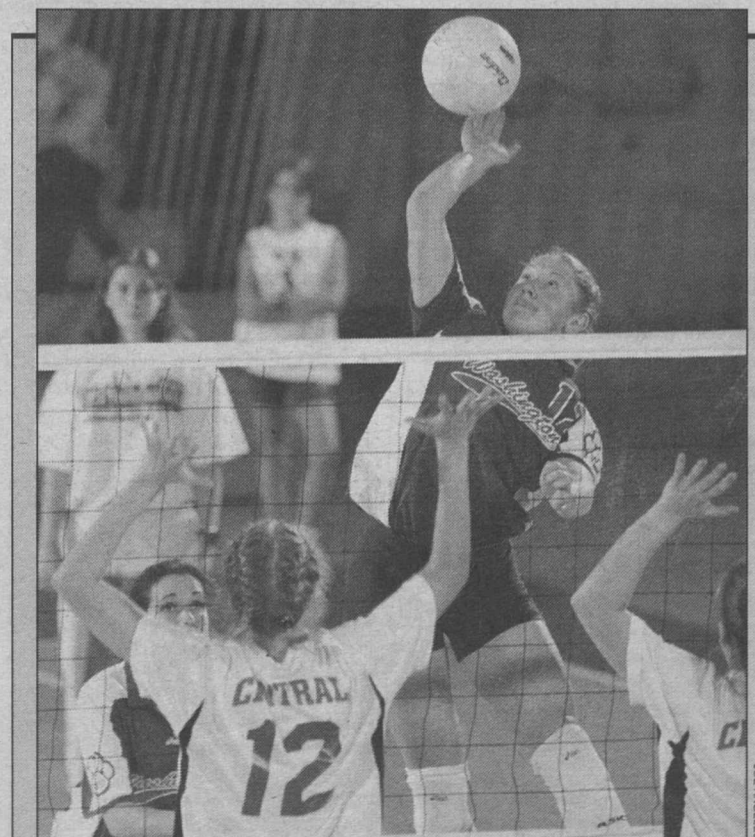
The program is part of larger science outreach programs initiated in the early 1990s by Sarah C. R. Elgin, Ph.D., professor of biology. Students in the Summer Undergraduate Research program find themselves working

on real science problems up to 60 hours or more a week, just like their faculty mentors. The experience is a reflection of the "real world" of the biologist or biomedical scientist.

According to Danny Kohl, Ph.D., professor of biology and a key person in the program, the research experience usually extends beyond the summer of their fellowships. Most students continue working in their labs during the school year by registering for Biology 500, Independent Study, and during subsequent summers are supported by funds from their mentors' research grants.

"We consider the Hughes summer program a one-time-only experience, and from that experience, we expect the mentors to come up with their own funding to support students in subsequent summers," said

See Hands-on, page 6



Soarin' and scorin' Sophomore outside hitter Julie Suellentrop flies high to notch a kill for the volleyball Bears Friday, Sept. 17, against defending NCAA Division III champion Central College (Iowa) at the Washington University National Invitational. The Bears fell to Central, three games to one, and are now 6-6 on the season.



**New chair** School of Law Dean Joel Seligman, J.D. (second from left), celebrates with Chancellor Mark S. Wrighton (left), Peggy Shepley and Lew Shepley following Seligman's installation as the first Ethan A. H. Shepley University Professor. The chair is named for Ethan A. H. Shepley Sr., who was the eighth chairman of the University's Board of Trustees, its 10th chancellor and a 1922 graduate of the School of Law. Medallions in honor of the new professorship were given to Seligman; Peggy Shepley, wife of the late Ethan A. H. Shepley Jr.; and Lew Shepley, son of the former chancellor.

## Music, mounds, millennium

### University College short courses offer wide variety

University College is exploring a variety of topics in its fall 1999 short courses, including literature, music, religion and, in the field, Illinois' Cahokia Mounds, where a day-long trip is planned to learn about one of the most important archaeological sites in North America.

The short courses are:

• **"From St. Louis to Cahokia Mounds: A Fall Pilgrimage"**

The outing will begin at the University with a lecture, then continue by bus, visiting mound groups along the way to Cahokia Mounds State Historic Site. Once there, the group will have lunch and tour the Interpretive Center and the site, where lie the archaeological remnants of one of the most sophisticated prehistoric Indian civilizations north of Mexico.

The pilgrimage, from 8:30 a.m.

to 5 p.m. Oct. 2, will be led by John Kelly, a research associate in the Department of Anthropology in Arts & Sciences and the director of the Powell Archaeological Research Center at Cahokia Mounds. The fee is \$60.

• **"The Music of Francis Poulenc"**

In observance of the centennial year of this popular French composer's birth, this course will include his operas and live performances in class to enhance discussions of his songs and jazz-influenced chamber music.

Sue Taylor, who teaches courses in University College in Arts & Sciences and does music reviews for the St. Louis Post-Dispatch, will teach the course, and guest lecturer Christine Knoblauch-O'Neal, artist in residence in dance, will review the ballet "Les biches" and its

reception in Paris in the 1920s.

The four-week course meets from 2 to 3:30 p.m. Mondays, Oct. 4-25. The fee is \$80, \$70 for members of the University's Friends of Music organization.

• **"Marching to the Millennium"**

This course will examine the origins of the idea of the millennium in Western religious tradition and how that idea has shaped social and political perceptions. Expectations of the first millennium will be contrasted with those of the second. The course will explore the millennial hopes of other religious traditions and the impact millennial thinking has had on North America.

Taught by Frank Flinn, Ph.D., adjunct professor of religious studies, the four-week course will meet from 10 to 11:30 a.m. Tuesdays, Oct. 5-25. The fee is \$80.

A fourth course, "Two 'Novels of Apprenticeship' by George Eliot," is already full. It is co-sponsored with the Department of English in Arts & Sciences and led by Susan Stiritz, who teaches English composition.

For more information on short courses or to register, call 935-6788.

and one of the most exciting is for development of alternative fuels," Al-Dahhan said. "DOE wants to advance the technology of such processes and improve reactor scale and design. The hydrodynamics of gas, liquids and solids in high pressure slurry bubble columns are very complex, and there is much to be learned about this type of technology. But, with CT and CARPT, we can get measurements and images of these processes that no one else can, to quantify the flow field in these reactors. By gathering knowledge both here and at Ohio State University, which also has unique facilities, we hope to advance the modeling for better designed and fully scaled reactors."

Al-Dahhan also collaborates with Sandia National Laboratory in New Mexico on the slurry bubble column project.

## Fastlane

### Paper grant proposals soon to be history

— from page 1

prepared to submit technical reports and scientific data electronically.

"The NSF is at the forefront of all government agencies in moving to paperless grants administration," said Cynthia White, director of sponsored research services in Cicero's office.

White said while the NSF systems are user-friendly, the transition will be challenging for faculty members and support staff. Users will need a personal identification number, available from White at 935-5889, and some training to familiarize themselves with the system. Departments also will need to address software and hardware requirements, technical and administrative support issues, she said.

Training is well along across campus, and every active research department has at least one Fastlane-trained administrator or faculty member. Cicero's office is prepared to conduct additional sessions one-on-one or with small groups of researchers. "We'll provide training for anyone who asks for it," White said.

Cicero considers the Fastlane system to be well-designed, especially in light of recent improvements, and notes that it serves a higher purpose than

simply eliminating paper grants.

"Fastlane will now provide better access and usability to the bank of scientific findings," he explained, "allowing one to search, sort and report on publications, concepts and the scientists involved. The reporting system transforms roomful of unwieldy paper into a database of research results that have vitality and accessibility."

White said this latter function has been a driving force behind changes at federal agencies, responding to pressure from Congress and the American public to be accountable for the results of federal research support.

The NSF's next important Fastlane deadline for researchers is October 2000, when all proposals also must be submitted electronically.

In 1998, as a result of the University's Research Support Services Assessment Project (RSSAP), an Information Technology (IT) Task Force was appointed to address electronic grants submission and other information technology issues. Chancellor Mark S. Wrighton initiated the RSSAP, a University-wide review of research administration support services, in 1997 and asked Cicero to spearhead it.

The NSF is the first federal agency to publish specific deadlines and requirements regarding electronic grants administration. Other agencies, including the National Institutes of Health, are expected to follow suit, and the IT Task Force is monitoring their activities.

## Grant money available to enhance international programs in A & S

The Office of International Studies has an annual sum of \$25,000 in grant money available to faculty for the purpose of encouraging and supporting international programs in Arts & Sciences.

Specifically, the International Activities Fund will be used to assist faculty who act as study abroad advisers in their departments; act as a study abroad liaison to particular programs overseas; or develop, adapt and teach courses specifically for the international studies major.

To apply for an award from the fund, faculty members should complete a one- to two-page proposal, establishing their

eligibility and describing their proposed use for an award. It will be important to provide evidence of how the proposed activities will enhance the student experience and the further internationalization of the program. A brief budget should be appended. No award will exceed \$2,000.

Proposals will be reviewed twice a year, on Nov. 1 and March 1. Deadline for the Nov. 1 review is Oct. 15. Complete proposals should be sent to Priscilla Stone, Ph.D., director of international studies, Campus Box 1088. For more information, contact Stone at 935-5073 or pstone@artsci.wustl.edu.

## Coal

### Grant funds research into alternative fuels

— from page 1

Two unique techniques are used at CREL. One is gamma ray computed tomography (CT). In principle, it is similar to a medical CAT scan. The other is computer automated radioactive particle tracking (CARPT), which traces the flow of the liquid or the solids by a radioactive particle. In combination, CT and CARPT allow a non-invasive determination of the flow pattern and development of models for different types of multiphase reactors which involve complex interactions of various gas-liquid combinations.

"The slurry bubble column reactor has lots of applications,

## Record

Washington University community news

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**Dizzily fun** Freshman Rachel Alexander glimpses the world a little differently after rotating wildly in this gyrate contraption Friday, Sept. 17, at Walk In, Lay Down Theatre.

## Medical School Update

### Breaking the barrier

Researchers take first steps toward protein therapy in humans

By BARBRA RODRIGUEZ

For decades, pharmaceutical companies have struggled to overcome the molecular equivalent of the Great Wall of China: the outer membrane of cells, which prevents all but the tiniest of proteins from entering. Now researchers have slipped a protein that's more than 200 times larger than the average drug into the cells of living mice and shown that the protein functions.

"For the very first time, we've introduced a large, biologically active protein into every cell of the body — including cells in the brain

that are normally protected by the blood-brain barrier," said Steven F. Dowdy, Ph.D., who led the research team at the School of Medicine. The group published its results in the Sept. 3 issue of Science.

Dowdy is an assistant investigator of the Howard Hughes Medical Institute and an assistant professor of pathology and of medicine. Steven R. Schwarze, Ph.D., a postdoctoral fellow in his laboratory, was lead author of the paper.

Getting full-sized, therapeutic proteins into cells would be advantageous because smaller drugs tend to interact with unintended targets. Larger proteins fit only onto the molecules for which they were designed, so they could be given in substantially lower doses, resulting in fewer side effects.

Dowdy led a previous research

team that used test-tube experiments to smuggle an enzyme into HIV-infected cells. The results, reported in Nature Medicine last December and January, focused on a human enzyme that makes cells self-destruct. The enzyme was modified to include a string of 11 amino acids that served as a passport for crossing a cell's outer membrane. But the researchers needed to prove that large proteins could slip into cells in model animals before considering human applications.

In the Science study, Dowdy and fellow investigators first attached a molecular passport

known as a protein transduction domain (PTD) to a compound whose uptake by cells could be monitored. The compound was a dye

called fluorescein, which turns green when exposed to fluorescent lighting. It normally doesn't enter cells because of its size — 2,000 daltons compared with the 500-dalton limit placed on most drugs.

The researchers injected mice with this combined PTD-fluorescein protein and isolated cells from the animals' blood and spleen. All the cells fluoresced green when checked 20 minutes after the injection. Cells in muscle and brain tissue also had soaked up the combined protein. "It was very encouraging to discover that we could get a mouse with an entirely green brain," Dowdy said, noting that the blood-brain barrier, a layer of cells lining the brain's blood



**Volunteering at La Clinica** At a health clinic for Latino families, Steven Jean Lapin, 2, exchanges a high five with Brandon Hadland, a student in the School of Medicine's Medical Science Training Program. A number of medical school physicians and students volunteer at La Clinica, which is held five nights a week in the basement of Scruggs Memorial Methodist Church in south St. Louis.

vessels, normally prevents most proteins from entering.

Dowdy and colleagues then linked a bacterial enzyme to the PTD and fluorescein. Their fluorescent analysis revealed that the 120,000-dalton enzyme, beta-galactosidase, entered all the cell types tested.

Beta-galactosidase was chosen because its activity could reveal whether an enzyme could continue to function after it had been transported into cells by the PTD. Cells take up proteins better if the proteins are at least partially unfolded, as was true for the enzyme.

Dowdy's team tested whether beta-galactosidase trapped inside cells of injected mice converted the enzyme's clear chemical target into a blue dye. A vibrant blue image of the kidney of the first mouse tissue the researchers evaluated is pinned

on a bulletin board above Dowdy's desk. "Once we got this first result, we realized that the protein would be biologically active in the rest of the body," Dowdy said.

The liver, lung and other tissues of the injected mice also turned blue when exposed to the enzyme's target. The animals' entire brains also stained blue within four hours of injection, indicating that a lot of the bacterial enzyme had refolded there by then. Importantly, the PTD didn't work its magic in the brain by destroying the blood-brain barrier. And the animals had no visible behavioral changes or other differences compared with untreated mice.

Dowdy since has tested modified versions of the PTD that should allow proteins to enter brain cells and other cells even more rapidly. And he is using his new technology to determine whether a malfunctioning protein helps jump-start cancer.

He noted that the laboratory's protein-targeting technology also might enable companies to create drugs that act only in disease-related cells, opening up a completely novel avenue of therapeutic approaches. "We can now do things in normal cells of mice that you could have never even dreamed of doing with any reliability a year ago," Dowdy said.

### Park is first pediatric surgeon to receive Javits Neuroscience Investigator Award

T.S. Park, M.D., the Shi H. Huang Professor of Neurological Surgery, has received a prestigious Javits Neuroscience Investigator Award from the National Institute of Neurological Disorders and Stroke at the National Institutes of Health (NIH). The award guarantees research funding for seven years. The amount for the first four years will be \$1.67 million, with an anticipated \$1.3 million total for the next three years.

The award is given to researchers who submit an outstanding grant application, who have a distinguished record of contribution to the field of neuroscience and who are expected to be highly productive in the future. Only four other neurosurgeons in the nation have received the Javits Award, and Park is the first pediatric neurosurgeon.

The award was established to honor Sen. Jacob Koppel Javits of New York, who died of amyotrophic lateral sclerosis in 1986.

"All of us in the Department of Neurological Surgery are extremely proud of Dr. Park's outstanding achievement in receiving a Javits Award," said Ralph G. Dacey Jr., M.D., the Edith R. and Henry G. Schwartz Professor and head of the Department of Neurological Surgery at the School of Medicine and neurosurgeon-in-chief at Barnes-Jewish Hospital. "He is unique among pediatric

neurosurgeons in simultaneously conducting an outstanding program of basic investigation and a world-class practice of pediatric neurosurgery."

Park also is neurosurgeon-in-chief at St. Louis Children's



**Park:** Fifth in United States to receive award

Hospital. He has received continuous NIH funding for 16 years, studying the cellular and molecular mechanisms that can damage the brain's tiny blood vessels during and shortly after birth. Initially, he systematically investigated the regulation of cerebral blood flow by adenosine under normal and pathological conditions in the newborn brain. Oxygen-starved brain cells make adenosine from a chemical fuel called ATP.

More recently, Park and long-time collaborator Jeffrey M. Gidday, Ph.D., assistant professor of neurological surgery, of cell biology and physiology and of ophthalmology and visual sciences, developed ways to look within the brains of anesthetized animals and see real-time interactions between white cells called leukocytes and the endothelial cells that line the microvessels. Using these and other methods,

they showed that leukocytes injure the brain's small vessels after the newborn brain is deprived of oxygen. They then identified several molecules that are involved in this inflammatory response.

With the new NIH funding, Park and Gidday will determine how various chemicals released by endothelial cells and by white cells called neutrophils interact to injure the linings of the brain's small blood vessels after adults have a stroke or injure the spinal cord. In collaboration with several other scientists at the medical school, they will use genetically altered mice and cultures of cells that mimic the endothelium. They hope their findings will facilitate the development of new medications for stroke and spinal cord injury.

Park received a Teacher Investigator Development Award from the NIH in 1984. He serves on a NIH Brain Disorder and Neuroscience study section and is a member of the prestigious Society of Neurological Surgeons and the American Academy of Neurological Surgery.

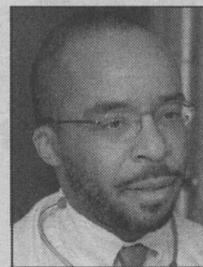
He joined Washington University as professor of neurological surgery in 1989 and became professor of pediatrics in 1993 and professor of anatomy and neurobiology in 1996. He assumed the Shi H. Huang Professorship in 1997.

### Doris Duke Clinical Scientist Award goes to Michael DeBaun

Michael R. DeBaun, M.D., assistant professor of pediatrics and biostatistics, has received a 1999 Doris Duke Clinical Scientist Award from the Doris Duke Charitable Foundation.

The three-year \$100,000 award supports investigators who are beginning careers as clinical researchers, especially in the areas of sickle cell anemia, heart disease, AIDS and cancer.

"Michael DeBaun is a tremendously talented physician-scientist whose epidemiological and clinical investigative studies on the diagnosis and treatment of children with sickle cell disease are first-rate," said Alan L. Schwartz,



**DeBaun:** Studies sickle cell disease

M.D., Ph.D., the Harriet B. Spoehrer Professor and head of the Department of Pediatrics. "This Doris Duke award will allow him to pursue these studies and improve the lives of children with this disease."

DeBaun studies strokes in children with sickle cell disease. About a fifth of children with the disease have a stroke before they are 12 years old, and two-thirds have a silent stroke that goes unrecognized because the child acts normally. The telltale sign is that the child cannot keep up with schoolwork. DeBaun is trying to understand how best to identify children who've had silent strokes, the risk factors for strokes and the

best way to help these children catch up at school.

He also studies syndromes that predispose children to cancer. He is especially interested in an overgrowth disorder called Beckwith-Wiedemann syndrome and has established the largest registry of children with this disease. This registry has helped him determine the risk of cancer in this population, the frequency of cancer and the clinical features most associated with development of cancer in this group.

After receiving a bachelor's degree from Howard University in 1983 and a medical degree from Stanford University in 1987, DeBaun completed a residency and chief residency in pediatrics at Washington University School of Medicine. He began studying stroke in children with sickle cell disease during a fellowship in pediatric hematology/oncology, also at the medical school.

DeBaun then completed a master's degree in public health at the Johns Hopkins University School of Hygiene and Public Health and a three-year epidemiology fellowship at the National Cancer Institute (NCI).

He joined Washington University in 1996 as an assistant professor of pediatrics after receiving the Robert Wood Johnson Minority Faculty Development Award.

He was honored with the Department of Pediatrics' Harvey Colten Achievement Award in 1997.

DeBaun also is a physician and medical director of the Pediatric Hospice at St. Louis Children's Hospital.



## Art historian Linda Nochlin to speak at Assembly Series

Pioneering feminist art historian Linda Nochlin will deliver an Assembly Series lecture at 11 a.m. Wednesday, Sept. 29, in Graham Chapel. The lecture is free and open to the public.

Nochlin is the Lila Acheson Wallace Professor of Modern Art at New York University's Institute of Fine Arts. Her book "Woman as Sex Object: Studies in Erotic Art, 1730-1970," published in 1972, was significant for introducing a feminist perspective to the field of art history and criticism.

Nochlin's other publications include "Realism and Tradition in Art, 1848-1900," "Impressionism and Post-Impressionism, 1874-1904" and "The Politics of Vision: Essays on Nineteenth-Century Art and Society."

Nochlin served as a professor of art history and the humanities at Yale University from 1989 to 1992, the Distinguished Professor of Art History at City University

in New York from 1980 to 1990, and the Mary Conover Mellon Professor of Art History at Vassar College from 1971 to 1979. She is a fellow of the American Academy of Arts and Sciences and of New York University's Institute for the Humanities. She was awarded a



### Assembly Series

**Who** Linda Nochlin  
**Where** Graham Chapel  
**When** 11 a.m. Wednesday, Sept. 29  
**Admission** Free and open to the public

Guggenheim Fellowship for 1984-85.

Nochlin earned a bachelor's degree in philosophy from Vassar College in 1951 and a master's degree in English from Columbia University in 1952. She received a doctorate in art history from New York University's Institute of Fine Arts in 1963.

For more information, visit the Assembly Series web page (<http://wupa.wustl.edu/assembly>) or call 935-5285.

## Sports Section

### Football team bests Wabash, 24-20

A school-record 95-yard kickoff return for a touchdown and three disrupted punts highlighted a big special teams day Saturday, Sept. 18, as the football team defeated visiting Wabash College 24-20 in a non-conference game at Francis Field. After Wabash took a 20-12 lead with 10 minutes to play in the third quarter, WU wide receiver Cory Snyder returned the ensuing kickoff 95 yards to draw the Bears within 20-18. WU took the lead for good with 1 minute, 34 seconds left in the third on a Mike Gallo one-yard touchdown run. The winning score was set up by the Bears' third big punt defense play of the game. Sophomore Brian Yanites snuffed out Wabash punter Matt Wilhelm's punt, and the Bears recovered on the one-yard line, setting up Gallo's game-winning score.

The Bear defense gave WU a 6-0 lead at the 9:11 mark of the first quarter on a four-yard fumble return for a touchdown.

### Pair of losses for men's soccer

The men's soccer team suffered a pair of tough losses during its weekend swing into the heart of Texas. The Bears dropped a 7-1 decision at Trinity University Friday, Sept. 17, for their first loss of the season. WU trailed only 3-1 at halftime, but three Trinity goals in a 15-minute span blew the game open and enabled the Tigers to tie the NCAA record for longest home field unbeaten streak (37-0-2). Sophomore midfielder Casey Lien provided the Bears' lone tally off an assist from classmate Matt Katke. At Southwestern University on Sunday, Sept. 19, Katke made the team's lone goal to open the scoring, but the Bears fell in double-overtime, 2-1. The Bears, favored to win the University Athletic Association in 1999, get to work on the prediction Saturday, Sept. 25, with a game versus Case Western Reserve University at Francis Field.

### Volleyball fourth at invitational

The volleyball team finished in fourth place with a 1-3 record at

the Washington University National Invitational this past weekend. The Bears dropped three 3-1 decisions—to No. 1 Central College, No. 4 Ohio Northern University and No. 15 Juniata College—before finishing the weekend with a 3-2 win over Illinois Wesleyan University. Junior Katie Gielow was named to the all-tournament team after hitting .402 with 85 kills, 33 digs and 27 blocks on the weekend. She blasted 25 kills and added a career-high 11 blocks against Central and had 24 kills, 11 digs and six blocks against Juniata. Senior Holly Ratkewicz had perhaps the best tournament of her career, hitting .506 and tallying 44 kills with just five errors. Sophomore Julie Suellentrop finished with 54 kills and posted team-highs with nine service aces and 71 digs.

### Runners strong at Vanderbilt

The men's and women's cross country teams continued their strong seasons with two impressive showings at the Vanderbilt University Commodore Classic Saturday, Sept. 18. The men's team finished in fourth place—ahead of four NCAA Division I schools—in the 14-team field. Junior Tim Julien finished fifth behind only four Division I runners with a time of 26 minutes, 44.50 seconds. The women's team finished in seventh place among the 15 teams and first among Division III teams. Junior Susan Chou was tops for the Bears, finishing 11th with a time of 18:39.68.

### Women's soccer suffers first loss

The women's soccer team, ranked No. 2 in the nation, split a pair of road games this weekend, knocking off Wittenberg University 3-0 before suffering its first loss of the season to DePauw University, 2-0. Junior Trisha Young, sophomore Jessica Glick and senior Lynn Telken each scored Saturday, Sept. 18, in the Bears win over Wittenberg. Sophomore Jamie Rosen earned her fourth shutout of the season in the nets. The Bears outshot DePauw 16-12 on Sunday, but were held scoreless for the first time this season.



Robert L. Pierce, Ph.D. (right), associate professor of social work, discusses the basics of U.S. child welfare policy with visitors from Japanese social service agencies and government ministries Sept. 14.

## Visitors

Japanese officials explore child abuse issues here

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said the delegation was enthusiastic in its efforts to better understand American programs dealing with such issues as parental rights, juvenile courts, foster care, child abuse and neglect.

"Their primary interest was the criteria and procedures for separating parents and children and the services provided to parents after such separations," Stiffman said, "but they also found time to take in a St. Louis Cardinals game on Monday night."

The delegation's schedule Tuesday was filled with a series of 45-minute presentations on children's services issues.

In addition to Stiffman, other social work faculty

making presentations were Associate Dean David Cronin, Ph.D.; associate professors Wendy Auslander, Ph.D.; Brett Drake, Ph.D.; Curtis McMillan, Ph.D.; and Robert Pierce, Ph.D.; and assistant professor Melissa Jonson-Reid, Ph.D.

The visit was co-sponsored by the Japanese government and the Japan-based Foundation for Children's Future. During their American tour, the delegation also made fact-finding stops in Florida and Washington, D.C.

## 'Work, families, public policy' seminars resume

Faculty and graduate students with an interest in topics relating to labor, households, health care, law and social welfare are invited to take part in a series of Monday brown-bag luncheon seminars to be held bi-weekly through December.

Now in its fourth year, the "Work, Families and Public Policy" series features one-hour presentations on current research interests of faculty from across campus and from other local and national universities. The presentations, which are held in Room 300 Eliot Hall, run from noon to 1 p.m. and are followed by a half-hour discussion period.

Robert Pollak, Ph.D., the Hernreich Distinguished Professor of Economics in Arts and Sciences and the John M. Olin School of Business, has been the lead organizer for the series for the last three years. Michael Sherraden, Ph.D., the Benjamin E. Youngdahl Professor of Social Development and director of the Center for Social Development at

the George Warren Brown School of Social Work, is co-organizer.

"This series has proved to be a great opportunity to explore the relationships between economics, business, social work and public policy and the importance of these disciplines to the family and the workplace," Pollak said. "The seminars have been well received by faculty and graduate students alike, and this fall's lineup promises more probing discussions."

Scheduled seminars are:

- Sept. 27: Robert Pollak, "Allocating Time";
- Oct. 11: Anne Winkler, Ph.D., associate professor of economics and public policy administration, University of Missouri-St. Louis, "Who Does the Housework in Married Couple Families? It Depends on Whom You Ask";
- Oct. 25: Mark Rank, Ph.D., professor of social work, Washington University, "Poor Chances: Rethinking the Likelihood of Poverty in America";
- Nov. 8: Donna Ginther, Ph.D., professor of economics in Arts and

Sciences, Washington University, "The Effect of Family Structure on Children's Educational Outcomes: Stepparents and Stepchildren";

• Nov. 22: Daniel Hamermesh, Ph.D., professor of economics, University of Texas, Austin, "The Economics of Beauty";

• Dec. 6: Casey Mulligan, Ph.D., associate professor of economics, University of Chicago, "Gerontocracy, Retirement, and Social Security."

The series is sponsored by the schools of business and social work; the Center for Social Development; the Business, Law, and Economics Center; the Department of Economics; the Graduate School of Arts and Sciences; and the Committee on Social Thought and Analysis. The room is provided courtesy of the Center for the Study of American Business.

For more information, contact Pollak at 935-4918 ([pollak@olin.wustl.edu](mailto:pollak@olin.wustl.edu)) or Sherraden at 935-6691 ([sherrad@gwbmail.wustl.edu](mailto:sherrad@gwbmail.wustl.edu)).

## 'Practical tips' Workshop series geared to social workers

Providing practical tips to professionals working in the social services arena is the goal of a series of five half-day continuing education workshops offered this fall by the George Warren Brown School of Social Work.

Geared to social workers — but open to the public — the "Professional Development in Social Work Supervision and Practice" workshop series kicks off Sept. 24 and runs through Nov. 12.

Topics include tips on how racial, gender and class issues influence client interaction; the integration of spirituality and clinical practice; burnout and self-care for social workers; and skills in assessing and intervening with adolescents.

Registration fee for the half-day sessions is \$25 per person. Registration is required, but professionals now working as field instructors for the school may qualify for free admission. Continuing education credits are

available. For more information, call Estelle Rochman at 935-4909.

All sessions will be held in Brown Hall Lounge.

The workshops are:

- **Inroads to Race, Gender and Class: Implications for Practice**, Friday, Sept. 24, 9 a.m. — Larry Davis, Ph.D., professor of social work and the E. Desmond Lee Professor of Racial and Ethnic Diversity, will present his nationally recognized clinical education seminar on the importance of understanding how racial, gender and class factors affect everyday interactions with social services clients.

- **The Integration of Spirituality and Clinical Practice**, Oct. 1 and Oct. 8: 1:30 p.m. — Edwin S. Harris, Ph.D., psychologist in private practice and assistant clinical professor of psychiatry at St. Louis University School of Medicine, will focus on ways to combine elements of spirituality and clinical practice in an effective

model for clinical intervention. Participants should plan to attend both sessions.

- **Burnout and Self-Care for Social Workers**, Nov. 5, 9 a.m. — Judith Schechtman, a licensed clinical social worker in private practice and a lecturer at the social work school, will focus on sources of individual stress for human service providers and ways to integrate self-care into one's daily routine.

- **Providers' Roles and Skills in Assessing and Intervening with Adolescents**, Nov. 12, 9 a.m. — Arlene Stiffman, Ph.D., professor of social work, and Violet Horvath, study coordinator, both of Washington University, will focus on effective methods of intervention for common behavioral, mental health, and contextual problems of adolescents.

Four additional workshops will be offered during the spring 2000 semester.



## Notables

### Dental alumni association bestows annual awards

Dale J. Cartwright, D.D.S., and Joseph W.C. Young, D.D.S., are the recipients of the School of Dental Medicine's 1999 Distinguished Alumni awards. They were honored at the alumni association's annual awards banquet, held Saturday, Sept. 18, at the Frontenac Hilton Hotel.

Two 1954 graduates of the former School of Dental Medicine, Cartwright and Young were recognized for their many contributions to dentistry and to their communities.

After serving as a dentist in the U.S. Air Force, Cartwright has maintained a dental practice in his hometown of Cabool, Mo., for 40 years. He also has been president of the Missouri State Board of Dental Examiners and the Springfield Dental Society and a fellow of the American College of Dentists, the Academy of General Dentistry and the International College of Dentists.

In addition to his professional achievements, Cartwright

has served as mayor of Cabool for three terms and as president of the Cabool Jaycees and of the Cabool R-4 board of education. He currently is a director of the Cabool State Bank.

Young, of Honolulu, recently retired from his dental practice after 40 years. His two sons are continuing his practice.

Young is president of the Chung Shan Association of Hawaii and the Washington University Club of Hawaii, as well as a number of other community organizations. He also is a member of the city planning commission and legislative chairman of the Mayor's Downtown/Chinatown Task Force. Young has served as president of four other Chinese organizations, holds directorships in the Chinese Chamber of Commerce and was named the 1998 Model Chinese Father of the Year by the United Chinese Society.



**Music men** Jim Russell (left), associate periodicals editor in the Office of Publications, and Steve Givens, assistant to the chancellor, front Nathanael's Creed, the band that led off the music lineup Friday, Sept. 17, at Walk In; Lay Down Theatre (WILD) in Brookings Quadrangle. Russell and Givens serve as music directors for the five-piece folk-rock band.

### New A&S departmental chairs, program directors named

A number of departmental chairs and program directorships recently have changed hands in the School of Arts & Sciences, according to Edward S. Macias, Ph.D., executive vice chancellor and dean of Arts & Sciences.

Among the changes in leadership are:

**William Bechtel, Ph.D.**, professor of philosophy, is the new chair of the Department of Philosophy. On the faculty since 1994, Bechtel replaces Roger F. Gibson, Ph.D., professor of philosophy, who remains with the department that he chaired since 1989.

Bechtel also serves as associate director of the Philosophy-Neuroscience-Psychology Program. His research and teaching focuses on the philosophy of the cognitive and neurosciences. His central research addresses the role of decomposition and localization as heuristics in developing brain-based models of cognitive function and epistemological issues concerning research techniques such as dissociation studies and neuroimaging. In addition, he does research and teaches in the history and philosophy of biology.

Bechtel edits the journal *Philosophical Psychology* and is co-editor of "A Companion to Cognitive Science" and of the forthcoming reader "Philosophy and the Neurosciences." He is past president of three academic societies.

He earned a doctorate in philosophy in 1977 from the University of Chicago and a bachelor's in religion in 1973 from Kenyon College. He previously taught at the University of Illinois Medical Center and Georgia State University.

**Steven Fazzari, Ph.D.**, professor of economics, is the new chair of the Department of Economics. A member of the faculty since 1982, Fazzari replaces Wilhelm Neufeind, Ph.D., professor of economics, who led the department since 1983.

Fazzari is an award-winning teacher and has held several administrative positions in the department, including six years as director of undergraduate studies.

He was one of a half dozen Hilltop faculty who, in 1997, helped launch a pilot program to bolster interaction between faculty and students through informal residence hall meetings. He has served on several University committees and task forces focused on undergraduate education.

His published research explores the foundations of Keynesian macroeconomics and the link between macroeconomic activity and finance. Fazzari's policy work on deficit reduction and capital gains taxation has been highlighted in several articles in the national press.

He received a doctorate in economics from Stanford University in 1982.

**Ahmet T. Karamustafa, Ph.D.**, associate professor of Islamic thought and religious studies, has been named director of the Religious Studies Program. On the faculty since 1987, Karamustafa assumed the chair from J. Patout Burns Jr., Ph.D., the Thomas and Alberta White Professor of Christian Thought, who recently accepted a position at Vanderbilt University.

Karamustafa's main research area is the social and intellectual history of Islam as a religious tradition in the medieval period. He teaches courses on Islam and comparative religion.

His publications include a monograph on ascetic movements in medieval Islamic mysticism, a book-length study on a 16th-century mystical text in Ottoman Turkish and an edited volume on cartography in traditional Islamic societies. Karamustafa is currently working on two book projects — one on Islamic definitions of religion and the other on medieval Islamic approaches to the question of human agency and subjectivity.

He earned a doctoral degree in Islamic studies in 1987 from McGill University in Montreal.

**Jack Knight, Ph.D.**, professor of political science, is the new chair of the Department of Political Science. A faculty member since 1988, Knight takes the reins from Lee Epstein, Ph.D., the Edward Mallinckrodt Distinguished University Professor of Political Science, who chaired the department since

1995. Knight has served as the department's associate chair and director of graduate studies for several years. He also is a fellow in the Center for Political Economy and a member of the Committee on Social Thought and Analysis. His primary interests are modern social and political theory, political economy, law and jurisprudence, institutions and organizations, and the philosophy of social science.

He taught previously at the University of Chicago and at the University of Michigan. He holds a law degree and a bachelor's degree from the University of North Carolina at Chapel Hill and master's and doctoral degrees from the University of Chicago.

**Steven G. Krantz, Ph.D.**, professor of mathematics, is the new chair of the Department of Mathematics, succeeding Edward N. Wilson, Ph.D., professor of mathematics, who remains on the faculty.

Krantz received a bachelor's degree in mathematics from the University of California, Santa Cruz in 1971. He received a doctorate in mathematics in 1974 from Princeton University. That same year, he joined the faculty of the University of California, Los Angeles, as an assistant professor, before moving to Pennsylvania State University as associate professor in 1981. He joined the Washington University faculty as professor of mathematics in 1986.

Krantz's research concentration is in harmonic analysis and complex analysis. He has held visiting professor posts at universities throughout the world. Among his many honors are two coveted mathematics writing awards — the Chauvenet Prize of the Mathematics Association of America (MAA) in 1992 for expository writing, and the Beckenbach Prize of the MAA in 1994 for his book, "Complex Analysis: The Geometric Viewpoint," published in 1992.

**William J. Paul, Ph.D.**, associate professor in the Performing Arts Department (PAD), has been named director of the PAD's new Film & Media Studies Program.

Paul, who arrived at the University last year from the University of Michigan in Ann Arbor, is the author of "Ernst Lubitsch's American Comedy"

(1983), "Laughing/Screaming: Modern Hollywood Horror and Comedy" (1994) and the forthcoming "Movies/Theaters: Architecture, Exhibition and Film Technology." His essays and reviews have appeared in dozens of journals and magazines, including *Film History*, *The Village Voice*, *Film Criticism*, *Film Comment*, the *New York Times Review of Books*, *American Film*, *Rolling Stone* and others.

Paul is a member of the Society for Cinema Studies and the American Studies Association. He has received research grants from the University of Michigan, the Massachusetts Institute of Technology and the National Endowment for the Humanities.

**Roger J. Phillips, Ph.D.**, professor of earth and planetary sciences, is the new director of the McDonnell Center for the Space Sciences. He replaces Robert M. Walker, Ph.D., the McDonnell Professor of Physics, who was the first director of the center, established in 1975.

Phillips specializes in planetary geophysics, with emphases on Earth, Mars, Venus and the Earth's moon, and has been actively involved in space missions, from Apollo to the currently active Mars Global Surveyor.

He came to the University in 1992 from Southern Methodist University where he had been chaired professor of geophysics since 1982. From 1968 to 1970, he held a variety of positions with the Jet Propulsion Laboratory in Pasadena, Calif., and he was director of the Lunar and Planetary Institute in Houston from 1979 to 1983.

Phillips received a geological engineering degree in 1963 from the Colorado School of Mines in Golden, and master's and doctoral degrees in applied geophysics in 1965 and 1968, respectively, from the University of California, Berkeley.

He is a fellow of the American Geophysical Union and has served as president of its Planetary Sciences Section.

**William E. Wallace, Ph.D.**, professor of art history and archaeology, has been named chair of the Department of Art History and Archaeology. He succeeds Mark S. Weil, Ph.D.,

professor and director of the University's Gallery of Art and Visual Arts and Design Center.

Wallace, who came to the University in 1983 from Columbia University, is an internationally recognized authority on Michelangelo and his contemporaries. He has published extensively on Renaissance art, including the volumes "Michelangelo: The Complete Sculpture, Painting and Architecture" (1998), "Michelangelo: Selected Scholarship in English" (1995) and "Michelangelo at San Lorenzo: The Genius as Entrepreneur" (1994).

He has received numerous grants and awards, including four from the National Endowment for the Humanities and five Washington University Faculty Research grants. In 1996-97, Wallace was a visiting fellow at the American Academy in Rome.

**Rafia M. Zafar, Ph.D.**, associate professor of English and of African and Afro-American studies, has been named director of the African and Afro-American Studies Program. Zafar, who joined the faculty in 1998, assumes the chair from Gerald L. Early, Ph.D., the Merle Kling Professor of Modern Letters, who will continue teaching English, African and Afro-American studies and American culture studies.

Zafar's current research on the intersection between identity, food and American literature was recently awarded a Kate B. and Hall J. Peterson fellowship from the American Antiquarian Society. When completed, that work, tentatively titled "And Called It Macaroni: Eating, Writing, Becoming American," will be published by Oxford University Press. Her study of early black writers, titled "We Wear the Mask: African Americans Write American Literature, 1760-1870," was published in 1997 by Columbia University Press. She also has co-edited two books.

She earned a doctorate in the history of American civilization from Harvard University, a master's degree in English from Columbia University and a bachelor's degree in English and creative writing from the City College of New York.

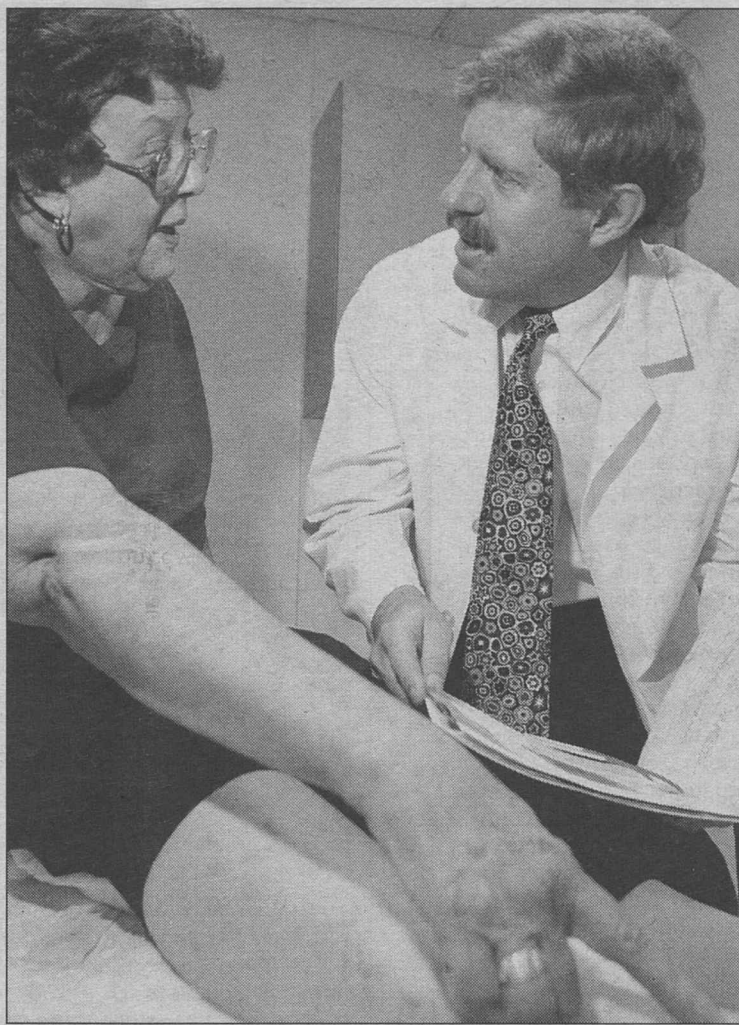


## Washington People

In 1987, when Jack Watkins was working as general manager at a car dealership in Farmington, Mo., two men broke into his office looking for money. Threatening him with an ax, they chopped off his left hand at the wrist, panicked and fled.

Fearing death, Watkins used his belt as a tourniquet to stop the bleeding and called for help. After being airlifted to Barnes Hospital, he was greeted in the emergency room by the surgeon on call, Bruce A. Kraemer, M.D. It was mere coincidence that Kraemer, a plastic and reconstructive surgeon, had just returned from extensive hand surgery training and was ready for the task.

Watkins underwent eight hand operations, all performed by Kraemer, as well as extensive rehabilitation. Today, he works at



Bruce Kraemer, M.D., associate professor of plastic and reconstructive surgery, discusses treatment for foot ulcers with patient Patricia James.

Mustoe describes Kraemer as having a unique ability to connect to his patients. "He is warm, genuine and kind. For patients, he is truly one who can empathize," he said.

Laurel Wiersema-Bryant, clinical nurse specialist and nurse practitioner, said a commitment to better patient care is at the heart of Kraemer's work. "When Dr. Kraemer became interested in wound care," she said, "he immersed himself in learning everything he could. He's interested in seeking a higher level of patient care, and because of that he's never satisfied with ordinary results."

According to Wiersema-Bryant, Kraemer vacations as hard as he works. "When I hear him planning his vacations, I always tease him about not planning any time to just sit," she said.

### Scuba diver

Kraemer has a passion for scuba diving and has dived in Australia, the Caribbean and Hawaii. This interest led to another hobby — keeping marine fish tanks. He also enjoys traveling with his wife, Beverley, a pathologist at St. John's Hospital, and his 8-year-old daughter, Jessica. This summer the three took a cruise to Scandinavia and Russia and also vacationed at a dude ranch in Colorado.

Although Kraemer approaches both work and play with intensity, he believes his field has reached an era when physicians must be cautious with the advances of medicine. He doesn't endorse the world's first hand

transplants, which were done recently, because he believes more research is needed. "The question is, 'Are we doing things that are beneficial for the patient?' I think being a more senior surgeon helps me understand that it's nice to dream the dream, but the patient has to live with it," he said.

## Taking life and work at full throttle

### Bruce A. Kraemer, M.D., thrives on putting people back together

By NICOLE VINES

a keyboard as a service writer for another car dealership.

Kraemer thrives on putting people back together. Sometimes he reattaches a hand; sometimes he reconstructs the breast of a woman with cancer. And sometimes he does microsurgery to help heal the complicated wound of a diabetic patient. Whatever the situation, the associate professor of plastic and reconstructive surgery is never afraid to tackle the challenge.

"Bruce has developed a reputation as the guy to go to for difficult surgical challenges in the area of reconstructive surgery," said Thomas Mustoe, M.D., professor and chief of the division of plastic and reconstructive surgery at Northwestern University Medical School.

### One speed — blast

Kraemer's colleagues say he only has one speed — blast. He talks, thinks and moves fast. "Bruce approaches life at full throttle," said Leroy Young, M.D., professor of surgery. This fast-paced enthusiasm was amply apparent during the interview for this article. Ditching the usual method of a one-on-one meeting in a quiet office, Kraemer opted to talk between seeing patients, consulting with nurses and rushing to the emergency room to supervise the reattachment of a fingertip.

"I drive my two secretaries nuts because I'm on the go all the time," Kraemer said. "You never know when or what type of an emergency situation is going to pop up, and so I'm always on the run."

Growing up in Buffalo, N.Y., Kraemer knew he either wanted to be a physician — or a bassoonist. In 1972, he enrolled at the University of Tulsa with music scholarships and graduated in three years with a bachelor of

science degree in zoology.

Intrigued most by medicine, he attended Washington University School of Medicine with the intention of becoming an internist. But his plastic and reconstructive surgical rotation caught his attention instead. "Every case in plastics had something special and unique about it," he said. "It was never dull, and that excited me."

After graduating in 1979, Kraemer completed a general surgery internship and residency at the University of Texas Medical School in Houston. He returned to Washington University for a plastic and reconstructive surgery residency before joining the faculty as instructor of surgery in 1988.

Kraemer describes plastic and reconstructive surgery as a "super" specialty. "We have techniques that can take our surgical colleagues' work one step further," he said. "Working as a team, we try to innovate new ways to solve problems, and that's part of the fun."

For the past 12 years he has used what once was considered an instrument of quackery — the leech. Despite such associations, Kraemer, who studied the practice under Harry Buncke, M.D., at the Ralph K. Davies Medical Center in San Francisco, said leeches are perfect for draining blood that sometimes accumulates in replanted fingers and toes.

Kraemer used leeches to save the fingertip of a 7-year-old St. Louis boy. The child's finger was cut so close to the tip that he was able to sew the arteries back together, but there were no veins for return blood flow. A few days earlier Kraemer had gotten his first batch of leeches, which were still in a bucket in his office. After two weeks and 25 leeches, the boy's fingertip was able to drain itself.

Kraemer also directs the Wound Care Center at Barnes-

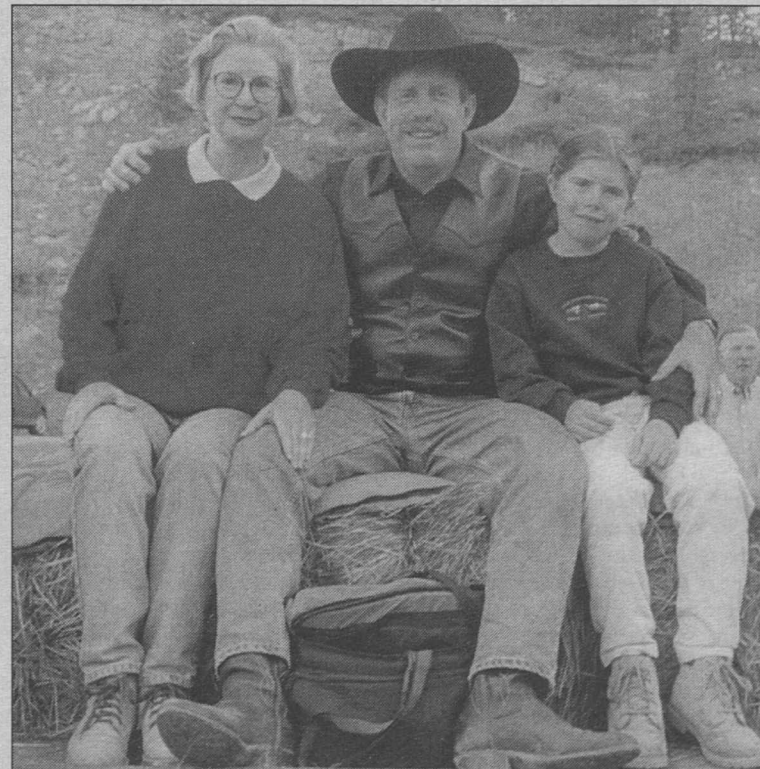
Jewish Hospital, where he treats patients with pressure sores and diabetic and vascular wounds. Currently, he is researching growth factors in pressure sores.

At the center, he works diligently with the nurses and staff not only to heal wounds but

"Bruce has developed a reputation as the guy to go to for difficult surgical challenges in the area of reconstructive surgery."

THOMAS MUSTOE

also to educate patients. "We're faced with trying to get patients to modify behavior as well as their expectations," he said. "It's day two. You take the dressings off a wound, and people expect immediate and perfect results. We try to help people have realistic expectations."



The Kraemers — Beverley, Bruce and Jessica — take time out for a photo at a Colorado dude ranch.

### Bruce A. Kraemer

**Birthplace** Philadelphia, Pa.

**Education** University of Tulsa, B.S., and Washington University School of Medicine, M.D.

**Positions** Associate professor of plastic and reconstructive surgery, director of the Wound Care Center at Barnes-Jewish Hospital

**Family** Wife, Beverley, and daughter, Jessica, 8

**Interests** Scuba diving, marine fish tanks, stamp collecting, photography