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Record

Aug. 23, 2002

Volume 26 No. 35



Washington University in St. Louis

Weather in outer space? Just ask a brown dwarf

By CAROLYN JONES OTTEN

Until recently, "How's the weather up there?" was a question for pilots, NBA stars and friendly giants.

Today, however, you might also ask a dwarf. A brown dwarf, that is.

Brown dwarfs, which have been described as "failed stars," are celestial bodies more massive than planets like Jupiter but not large enough to sustain the thermonuclear reactions that make a star shine.

In a recent issue of *Astrophysical Journal Letters*, Katharina Lodders, a senior research scientist in the University's Planetary Chemistry Lab in the earth and planetary sciences department in Arts & Sciences — along with researchers from the University of California, Los Angeles, NASA and other institutions — reported the first evidence for the existence of changing weather patterns on brown dwarfs. They are the first non-planetary objects to exhibit such phenomena.

Lodders' role was to model what compounds may exist under the temperatures and pressures in brown dwarf atmospheres.

"The thermodynamic modeling tells us that liquid iron is settling into clouds," Lodders said. "There are lots of Earth-like analogies to suggest what the 'weather' is like. The appearance might be described as a sort of fog

and clouds, but there are still details to be sorted out to get the most accurate picture."

Liquid iron clouds

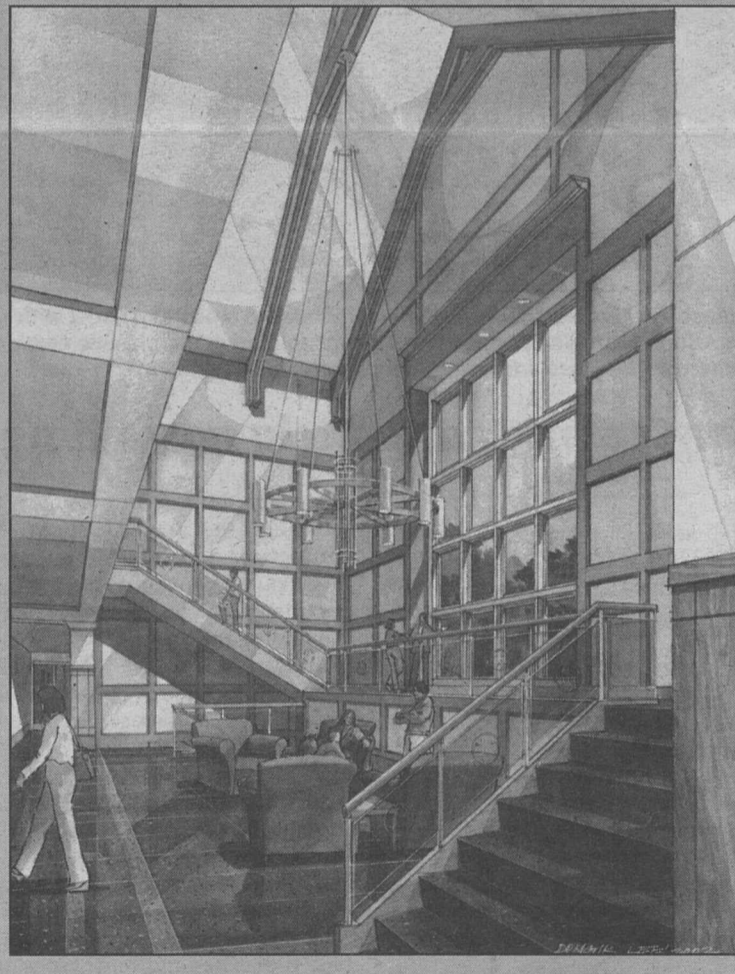
Brown dwarfs bear similarities to both stars and planets. Like stars, their evolutionary life cycles can last billions of years, and they contain the same elements in roughly similar proportions as our sun and other stars.

Yet, lacking sufficient mass to become self-sustaining heat sources by nuclear burning, brown dwarfs cool as they age, though for the vast majority of their life cycle they do remain substantially warmer than the gas-giant planets in our solar system. Like planets and stars, they possess gravitational fields and atmospheres that get cooler as one travels farther from the core to the outside.

These two factors facilitate the settling of condensates into clouds once the atmospheres become cool enough to "freeze out" condensates. Where Earth clouds are made of water vapor, the intense heat of brown dwarfs gives rise to metallic gases that can then form clouds of, say, liquid iron.

Lodders is a specialist in applying thermodynamics to study the chemical makeup, from elemental ingredients, of everything from stardust particles to planets and stars. An analogy might be examining various

See **Brown dwarf**, Page 6



Brookings Hall's future neighbor

These artist's renderings show the future building for the Department of Earth & Planetary Sciences in Arts & Sciences: at top, the exterior as seen from Hoyt Drive; and at left, the interior of the west entrance. Excavation for the building, just to the northeast of Brookings Hall and east of Crow Hall, has begun. The 150,000-square-foot structure is expected to be completed in spring 2004. With four levels, the building will include research facilities and offices for faculty members, a large "dry" laboratory and two teaching laboratories. In addition, the NASA tape archive will be housed in the building, as well as a computer lab and a library.

Related story: University renovates two apartment buildings near the Hilltop Campus; ready for students this fall. **Page 2**

Mouse model mimics natural development of epilepsy

By GILA Z. RECKESS

School of Medicine researchers have developed a mouse model of the genetic disorder tuberous sclerosis complex (TSC).

The mice develop epilepsy within the first few months of life, mimicking one of the most devastating complications of TSC in children.

This research represents one of the first animal models of epilepsy that does not require toxic injections or injury and results from a single gene defect. The study appears online in *Annals of Neurology* and will be published in the journal's September issue.

"What's enormously exciting about this study is the potential to employ this mouse model as a pre-clinical model for TSC-related epilepsy," said David H. Gutmann, M.D., Ph.D., the Donald O. Schnuck Family Professor of Neurology. "In addition, we disrupted a gene for TSC in one of the brain's support cells, called astrocytes, instead of in the brain's main communication cells, neurons. Our results therefore shed light on the

contribution of cells other than neurons to the development of seizures and epilepsy."

Gutmann led the study in conjunction with Kelvin Yamada, M.D., associate professor of neurology and pediatrics.

TSC is a genetic disorder that affects about 50,000 Americans, more than half of whom experience frequent debilitating

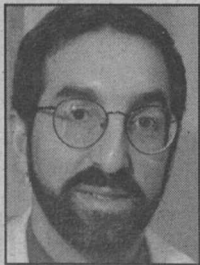
epileptic seizures. TSC also causes tumors to form in various organs, including the brain.

Physicians cannot cure the disease nor can they predict which individuals will experience severe symptoms.

Scientists have identified two genes responsible for TSC — *TSC1* and *TSC2*. Because affected individuals often develop brain tumors, Gutmann's team hypothesized that *TSC1* may provide a clue into tumor development.

Because mice that completely lack *TSC1* die early in development, the researchers engineered a strain of animals that are missing the *TSC1* gene in only one type of brain cell: astrocytes. Surprisingly, the mice did not develop tumors;

See **Epilepsy**, Page 6



Gutmann

Shuttle bus system rolls out more efficient routes

By ANDY CLENDENNEN

After a yearlong study, countless surveys and a lot of input from various student, faculty and staff groups, the University shuttle bus system has adapted new routes.

"We targeted areas such as travel habits, times of travel and what people are looking for in the service," said Lisa Underwood, manager of parking and transportation services. "It took us a year to do it, and our goal when we went into it was to take our existing resources and use them more efficiently — do more with the same resources."

"What we ended up with basically is more service available to the community."

Two of the bigger changes to the shuttle routes include

On the Web

A complete rundown of the shuttle routes can be found on the Web at transportation.wustl.edu/schrout.html.

servicing the South 40 and West Campus until 1 a.m. — service previously stopped at 6 p.m. — and increasing the service from the University to Saint Louis Galleria and Brentwood Square.

"It was kind of a redesign," Underwood said. "We had several little routes before that were more destination-oriented — (for example) the Lewis Center route only went from the Lewis Center to the Hilltop Campus."

"What we tried to do was make it simpler for people to understand and use, and we also

wanted to be more efficient."

All of the previous shuttle routes have been combined into three basic lines:

• **Gold line** — connects the Medical Campus with the Hilltop Campus and University City;

• **Green line** — connects West Campus, the South 40 and the Hilltop Campus, as well as some neighborhoods east of Hanley Road and south of campus; and

• **Red line** — services the same areas as the green line, but ventures into nearby shopping areas and Shaw Park on weekends and evenings.

"We haven't stopped doing what we had been doing," Underwood said. "We think we made it better."

For up-to-date shuttle information, call 935-4140, which will be staffed between 7 a.m.-1 a.m.

Welfare use more common than many think

By JESSICA N. ROBERTS

Many Americans believe that welfare use happens to someone else, to people outside of mainstream society. But a study published in a recent issue of *Social Work* casts considerable doubt on that notion, finding that nearly two-thirds of all Americans between 20 and 65 will at some point turn to a public assistance program.

"Although public-assistance users are routinely vilified and portrayed as members of marginalized groups, in fact, most Americans will encounter the welfare system at some point during their adult years," said Mark R. Rank, Ph.D., professor in the George Warren Brown School of Social Work and first author of the study. "Contrary to much of the popular rhetoric, the use of the United States social safety net is widespread and common."

The study also looked at the length of welfare use, and its results go against the current perception that those on welfare

will languish in assistance programs for five or more years at a time. In fact, the study indicates that "the use of welfare across the adult years tends to occur over fairly short intervals of time."

"Contrary to much of the popular rhetoric, the use of the United States social safety net is widespread and common."

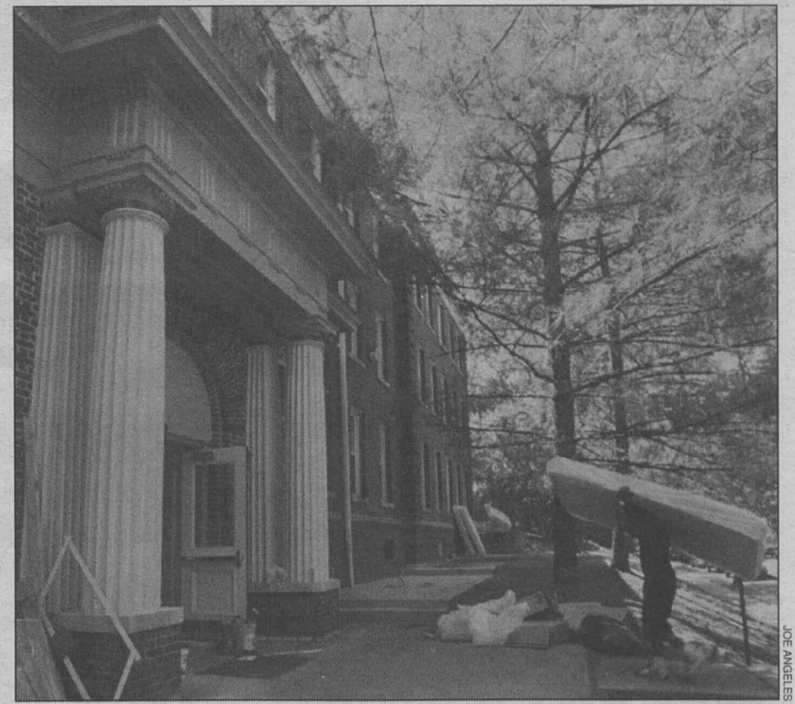
MARK R. RANK

"While 65 percent of the population will encounter at least one year of welfare use, only 16 percent of the population will use public assistance for five consecutive years," said Rank, who co-authored the study with Thomas A. Hirschl, a professor at Cornell University.

After Americans use an assistance program for the first time, however, they are likely to do so again. According to the study, of the 65 percent of people using a welfare program, 90 percent will do so more than once, making the total number of years that welfare is used across the life cycle sizeable.

The findings in this study reveal that, "Although the U.S. welfare state may be minimalist in terms of the scope and the level of benefits it offers to impoverished people, it is far from minimalist in the extent to which it is eventually relied on by the general population."

The study is based on a unique analysis of a series of life tables constructed from the Panel Study of Income Dynamics (PSID). The PSID is a nationally representative longitudinal sample of households and families interviewed annually since 1968. Welfare in the United States consists of in-kind programs such as food stamps and Medicaid, or cash programs such as Temporary Assistance for Needy Families or Supplemental Security Income.



Greenway Apartments is the larger of the two apartment buildings renovated by the University over the summer. With more than 100 beds, it's about twice the size of Rosedale Apartments. Residential Life will manage both buildings, which are offered to upperclass undergraduate students.

University renovates two nearby apartment buildings

By ANDY CLENDENNEN

For many, college is all about independence. And now, several University students will have the opportunity to assert that independence while still remaining part of the campus community.

The University has renovated Rosedale Apartments and also half of Greenway Apartments, and has handed the running of the two buildings to Residential Life.

Both buildings previously had been owned by the University but had been managed by Parkview Properties.

"They were old and in pretty poor shape," said Steve Rackers, manager of capital projects and records in facilities, "and the idea was to bring them back up to comparable quality of what we do on campus."

"It's an extension of our housing. They are providing basically the same services that Residential Life does. They are as close to the campus as South 40 is, so we thought, 'Why can't Residential Life manage another building in another area that close to campus?'"

Rosedale is located at the corner of Waterman and Rosedale avenues, just south of Delmar Boulevard, and has about 54 beds. Greenway is at the corner of Washington and Melville avenues, just south of the University City Loop, and is approximately twice the size of Rosedale.

Several changes are in store for the residents of the two buildings.

"The students will be living with a University housing contract rather than having a month-to-month lease, and the billing will be done through student billing services, which is similar to our other housing," said Justin X. Carroll, assistant vice chancellor for students and dean of students.

"Some students like that — the bill goes right to Mom and Dad."

"And we will have resident advisers scattered

in the apartment areas, and they will have several roles. One is that they'll need to be a communication source between students and the University — some students that have lived off-campus have missed out on some important campus events because they haven't known about them, so the RAs will be communicators.

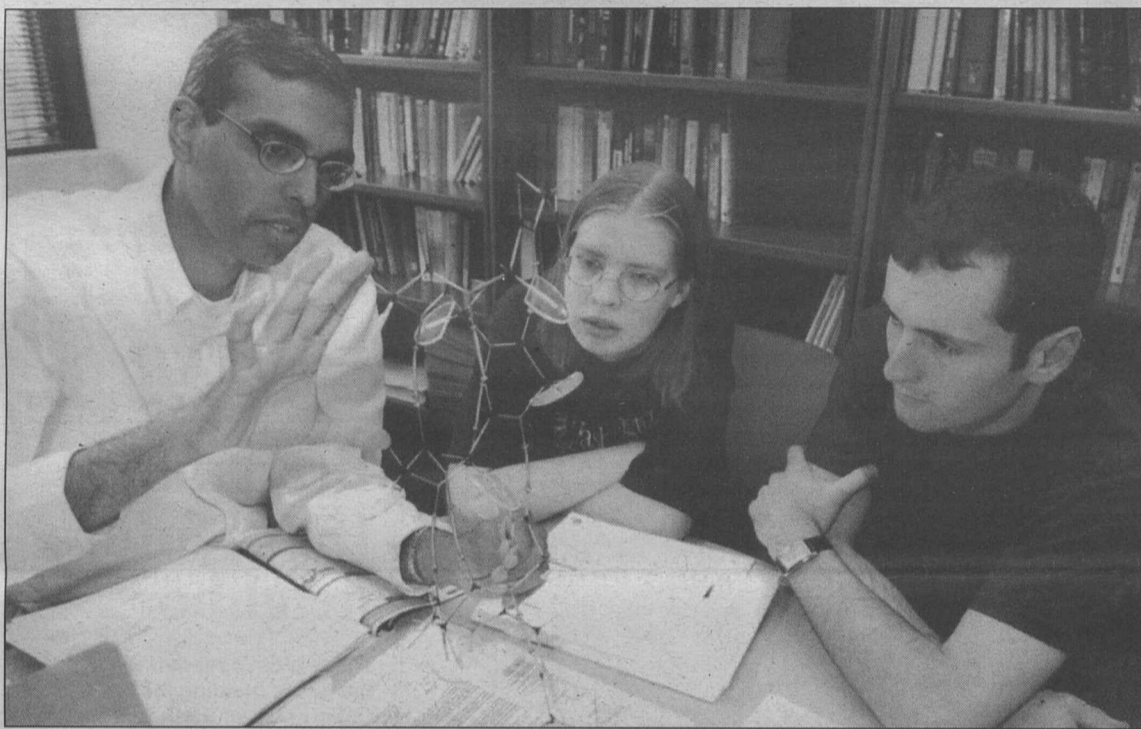
"And they will also help the students make the transition to being more independent, being aware of their community and being good neighbors."

The renovation took place just as the spring semester ended, and Rackers said that before the work even began, students had already signed up for all the available living spaces.

The work done was in response to demand, Carroll said.

"We've had an increase in the number of upperclass students who have desired to remain in University housing," he said. "And we've also seen a greater demand for some apartment-style housing by the upperclassmen, where they can have their own kitchen, living room and live more independently."

"Prior to this, we only really had Millbrook Square, so this expands our capacity by about 300 beds."



Rohit Pappu, Ph.D. (left), assistant professor of biomedical engineering, discusses a protein model with students Rachel Nordgren and Patrick Alford. Pappu's studies of protein misfolding could provide new information regarding the onset of numerous diseases, including Alzheimer's and Parkinson's.

Researcher seeks ways to prevent protein misfolding

By TONY FITZPATRICK

A University biomedical engineer is unlocking the rules Mother Nature abides by in knowing "when to hold 'em or fold 'em."

He's not dealing with cards; rather, with proteins — products that carry out the plans of our genes. The biological function of proteins is directly determined by their folded shape in three-dimensions.

The folding process is a thermodynamically driven reaction modulated by changes in environmental parameters such as temperature, solvent conditions, protein concentration as well as by mutations in amino acid (the building blocks of proteins) sequence.

"Clearly there are universal principles that underlie the misfolding process. I am using simple peptide systems with well-defined folded states to understand these universal physical principles."

ROHIT PAPPU

Rohit Pappu, Ph.D., assistant professor of biomedical engineering, is developing computational models for understanding the formation of misfolded proteins

and amyloid fibrils, bundled substances that are associated with several diseases.

Changes in any of these parameters can lead to errors in the folding process. These misfolded proteins lead to irreversible protein aggregation and subsequent disease.

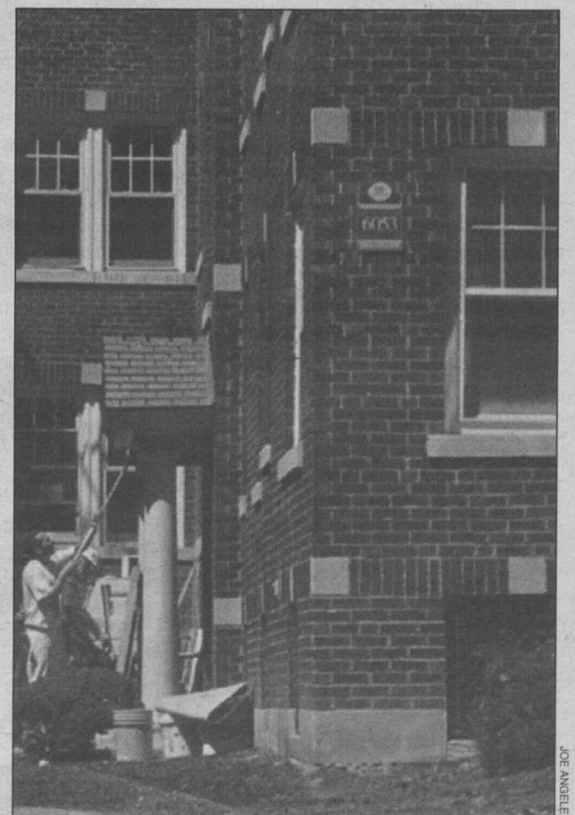
Protein misfolding is associated with the onset of Alzheimer's disease, bovine spongiform encephalopathy or "mad cow disease," Cruetzfeldt-Jakob disease, cystic fibrosis, emphysema, Huntington's disease, Parkinson's disease, type II diabetes and some types of spinocerebellar ataxia, as well as several other diseases.

These diseases, referred to as amyloidoses, are characterized by the deposition of insoluble protein aggregates or amyloid fibrils resulting from misfolded proteins. This misfolding leads to irreversible protein aggregation.

A vast number of amino acid sequences of disparate lengths form amyloid fibrils.

"Clearly there are universal principles that underlie the misfolding process," Pappu said. "I am using simple peptide systems with well-defined folded states to understand these universal physical principles."

His recent work on the organizing principles for structure in unfolded peptides will serve as bedrock for further research in the misfolding of single chains of polypeptides as well as interactions among many chains.



Rosedale Apartments, above, also received a face-lift this summer. Steve Rackers, manager of capital projects and records in facilities, said tongue-in-cheek of both buildings, "Students might be a little upset that the floors are now level and the doors close tightly."

Record

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 Washington University in St. Louis

School of Medicine Update

Mice provide insight into bone metabolism disorders

BY GILA Z. RECKESS

Mice lacking a protein called SHIP (Src homology 2-containing inositol-5-phosphatase) have twice as many cells that break down bone as normal mice, according to a study led by School of Medicine researchers. Consequently, the mice lose a significant amount of bone density and thickness.

These results not only provide insight into diseases of bone metabolism such as osteoporosis, but the mouse strain used in the study also may be the first animal model of a rare genetic disease called juvenile Paget's disease (JPD).

"Our findings are important for understanding how bone forms and breaks down, and how those processes are disrupted in diseases like JPD," said F. Patrick Ross, Ph.D., research professor of pathology and immunology.

Ross led the study, which appeared online in *Nature Medicine* Aug. 5 and will be published in the September issue of the journal. The first authors were Sunao Takeshita, Ph.D., and Noriyuki Namba, Ph.D., both postdoctoral fellows in Ross'

"These findings provide valuable insights into the molecular basis for how bone is degraded, a process important for several serious bone diseases."

F. PATRICK ROSS

laboratory.

JPD, also known as hereditary hyperphosphatasia or hyperostosis corticalis deformans juvenilis, is a painful skeletal disease characterized by abnormally fast formation and breakdown of bone throughout the body, leading to debilitating fractures and deformities beginning soon after birth.

In healthy individuals, there is a careful balance between the number of osteoblasts, cells that create bone, and osteoclast cells that break down bone. But research suggests that people with JPD have more osteoclasts and that these cells are larger than normal, creating a dangerous imbalance in bone turnover.

Researchers in Vancouver, British Columbia, recently engineered a strain of mice lacking the gene for SHIP. The

mice have abnormally high numbers of macrophages, a type of immune cell. Because macrophages can develop into osteoclasts, the Washington University team hypothesized that the mice lacking SHIP may eventually develop symptoms similar to JPD.

They were right. The mice had twice as many osteoclasts as normal mice, and the cells were much larger than normal, with about 100 nuclei. Since each macrophage has just one nucleus, the researchers conclude that each enlarged

osteoclast represents about 100 fused cells. In other words, they looked exactly like osteoclasts from a person with JPD.

When the team examined cell samples in petri dishes, macrophages from mice lacking SHIP not only rapidly developed more osteoclasts than normal, the osteoclasts also lived longer. Moreover, they broke down bone much faster than normal osteoclasts.

The researchers also determined how a deficiency in SHIP leads to an excess number of enlarged osteoclasts. In addition to having too many nuclei, the cells also were hypersensitive to two proteins — macrophage-colony stimulating factor (M-CSF) and receptor activator of nuclear factor-kB ligand (RANKL) — which stimulate macrophages to become osteoclasts.

Researchers believe that SHIP

normally dampens the message sent from M-CSF and RANKL, keeping those signals at a reasonable level. This current study supports that theory: Without SHIP, macrophages became hypersensitive to M-CSF and RANKL.

As a result, too many macrophages developed into osteoclasts, and they did so at a dangerously fast pace.

With too many enlarged osteoclasts, the mice had shorter, thinner bones, lost about 22 percent of their bone-mineral density and were far more susceptible to bone fractures, all hallmarks of JPD.

"These findings provide valuable insights into the molecular basis for how bone is degraded, a process important for several serious bone diseases," Ross said. "We hope the results also may lead to effective new treatments for such diseases in the future."

Johnston, Wilson receive genetics appointments

BY DARRELL E. WARD

H Mark Johnston, Ph.D., professor of genetics, has been named interim head of the Department of Genetics in the School of Medicine, and Richard K. Wilson, Ph.D., associate professor of genetics and of molecular microbiology, has been named director of the Genome Sequencing Center.

Johnston and Wilson will succeed Robert H. Waterston, M.D., Ph.D., who will head the Department of Genome Sciences at the University of Washington School of Medicine in Seattle. A search committee will be appointed to seek Waterston's permanent replacement as head of the Department of Genetics.

Johnston's appointment was announced by William A. Peck, M.D., executive vice chancellor for medical affairs and dean of the School of Medicine.

"Mark Johnston is an excellent scientist and teacher who has the personal qualities of leadership," Peck said. "I have every confidence that he will do a fine job leading the Department of Genetics during this very important transition period."

In 1996, Johnston led a team of University investigators as part of an international effort to decipher the genetic structure, or genome, of baker's yeast. The work was done in collaboration with the medical school's Genome Sequencing Center and was the largest sequencing project up to that time.

The team later sequenced the genomes of five species of yeast and compared their genetic makeup to that of baker's yeast. The study's goal was to identify the regions of genes that are retained by all six species and therefore are probably involved in regulating gene activity.

Johnston also uses yeast as a model to understand how cells sense the presence of glucose and how that signal is passed from the surface to the interior of the cell,

where it turns genes on and off. This work could lead to a better understanding of the same process in humans, both those who are healthy and those with diabetes.

Peck also announced Wilson's appointment.

"Rick Wilson is an experienced leader in genome research and has demonstrated ability as an administrator," Peck said. "I am pleased that he will be directing the Genome Sequencing Center in this era of applied genomics, and I am certain he will continue its record of outstanding achievement."

Wilson joined the University in 1990. He played a significant role in the mapping and sequencing of the human genome, and in the mapping of the mouse genome completed earlier this year. He also led the team that sequenced and mapped the genome for the bacterium *Salmonella typhimurium*, a leading cause of food poisoning.

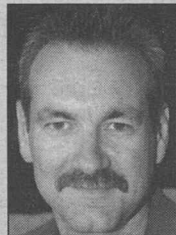
In addition, he led the University's team in the Arabidopsis Genome Initiative, an international multicenter effort to decipher the DNA structure of the flowering mustard, *Arabidopsis thaliana*, the first plant genome to be mapped.

In 1998, Wilson and colleagues, including John D. McPherson, Ph.D., associate professor of genetics, founded Orion Genomics, an agricultural research company specializing in isolating plant genes of research interest. He currently leads University teams that are finishing the sequences of human chromosomes 2, 4, 7 and Y.

Waterston joined the University in 1976 and later founded and directed the medical school's Genome Sequencing Center, building it into one of the world's leading DNA sequencing centers. He co-led the sequencing of the genome of the scientifically important roundworm, *Caenorhabditis elegans*, an accomplishment that paved the way for the international Human Genome Project, which Waterston also helped lead.



Johnston



Wilson



Intro to ethics William Edwin Dodson, M.D., associate vice chancellor and associate dean for admissions, leads a discussion with first-year medical students about the issues explored in the Pulitzer Prize-winning play *Wit*, which was read by professional actors during the School of Medicine's orientation week. The play, penned by Margaret Edison, tells the story of an English professor dying from ovarian cancer. The Aug. 15 production introduced incoming students to the experience of medicine and provoked discussion of medical issues ranging from the ethics of medical research to tensions between patients and care providers.

Local retirement community focus of study

BY GILA Z. RECKESS

The University's Center for Aging is collaborating with the Jewish Federation of St. Louis to investigate naturally occurring retirement communities, or NORCs.

The Jewish Federation received \$1.3 million from the Department of Health and Human Services for the pilot project, the largest of five grants awarded nationally for this type of research.

The program's mission is to find ways to help aging Americans spend their senior years in their own homes with the help of support services that provide transportation, health and human services and home modifications.

Many apartment buildings and neighborhoods have naturally evolved into retirement communities, including an area of Creve Coeur that includes 1,500 residents older than 65. The Jewish Federation and the Center for Aging plan to use the grant money for pilot research projects and to improve outreach services to this community.

According to John C. Morris, M.D., director of the Center for Aging and the Harvey A. and Dorismae Hacker Friedman Professor of Neurology, the

University's team is excited about this opportunity to collaborate with the Jewish Federation to identify and accommodate the needs of St. Louis' elderly.

"Our newly created Center for Aging exists to explore strategies that enable older adults to live longer, more productive lives," Morris said. "By partnering in this project, we can begin to

understand what elders themselves perceive as important opportunities to remain productive in their community, which will help us plan larger, long-term studies to address these issues."

Sen. Jean Carnahan supported the grant's proposal and will be in St. Louis to kick off the program in late September.

Diabetes walkathon scheduled for Sept. 29

The School of Medicine is supporting the Juvenile Diabetes Research Foundation's 2002 Walk to Cure Diabetes, which will be held Sept. 29 in Forest Park. Funds raised by walkers will benefit the foundation's work to find a cure for diabetes and its complications, including funds for research

projects at the University. William A. Peck, M.D., executive vice chancellor for medical affairs and dean of the School of Medicine, is the corporate recruitment chair for this year's walk. The medical school's team is seeking participants and team captains. For more information, call 362-6825.

Language skills study needs children

Halthy children are needed for a School of Medicine study on developmental language skills.

Seven- and 8-year-old boys and girls will be asked to perform language tasks while researchers take pictures of their brain activity using magnetic resonance

imaging. Volunteers must be right-handed and native English speakers.

Participants will be paid for their time and will receive a free picture of their brain to keep.

For more information, call 362-4154.

University Events



If This Be Not I (1945), by former School of Art professor Philip Guston, from the exhibition *H.W. Janson and the Legacy of Modern Art at Washington University in St. Louis* at the Gallery of Art Aug. 30-Dec. 8.

Janson's legacy honored in Gallery of Art exhibition

By LIAM OTTEN

In the mid-1940s, H.W. Janson, author of the influential textbook *History of Art*, served as curator at the University, where he built what he proudly called "the finest collection of contemporary art assembled on any American campus."

In the 1950s and '60s, successive curators — along with a handful of prominent St. Louis collectors — continued to strengthen the great scholar's curatorial foundations, thus establishing one of the nation's finest university collections of modern art.

Starting Aug. 30, the Gallery of Art will honor that distinguished history with *H.W. Janson and the Legacy of Modern Art at Washington University in St. Louis*, an exhibition of more than 20 masterworks from the University collection.

The show — which debuted in a slightly different form at New York's Salander-O'Reilly Galleries in March — features works by many of the 20th century's foremost European and American modernists. The exhibit is free and open to the public.

Artists include Georges Braque, Alexander Calder, Willem de Kooning, Theo van Doesburg, Jean Dubuffet, Max Ernst, Arshile Gorky, Philip Guston, Juan Gris, Marsden Hartley, Paul Klee, Ferdinand Léger, Jacques Lipchitz, Henri Matisse, Ludwig Meidner, Joan Miró, Pablo Picasso, Jackson Pollock and Yves Tanguy.

"Janson was the instrumental force in selecting and acquiring modern art for the University,"

said Sabine M. Eckmann, Ph.D., curator for the Gallery of Art, who organized the exhibition. "Having arrived in the United States in 1935 as an exile from Hitler's Germany, he rejected the National Socialists' nationalistic interpretation and propagation of German art and was committed to cosmopolitanism."

The show opens with a reception from 5-8 p.m. Aug. 30 and remains on view through Dec. 8.

The exhibition is divided into two sections: works acquired during Janson's tenure and works acquired in his curatorial wake.

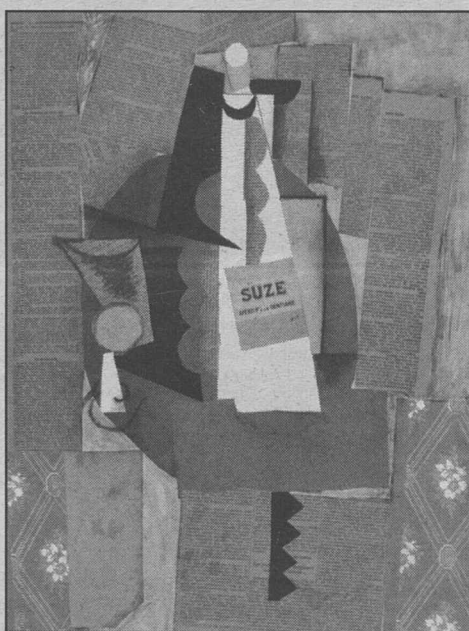
Janson's selections tend to emphasize international European movements, especially cubism and constructivism. Highlights include Picasso's early collage *Glass and Bottle of Suze* (1912); Gris' *Still Life With Playing Cards* (1916); and Braque's *Still Life With Glass* (1930).

American modernists are represented by Guston's *If This Be Not I* and Calder's *Bayonets Menacing a Flower* (both 1945).

Janson, who left Germany in 1935 to protest Nazi cultural policies, also focused on the work of surrealists-in-exile. Major acquisitions include Ernst's visionary landscape *The Eye of Silence* (1943-44), which conjures a haunted, war-ravaged Europe as well as a fantastical, primeval American West; and Tanguy's moody *La Tour Marine (Tower of the Sea)* (1944), whose bright colors and large-scaled objects seem to reflect the artist's arrival in New York.

"The scope of Janson's undertaking was unusual, considering that the most progressive American museums had only begun collecting modern work in the late 1920s and 1930s," Eckmann said. "In light of the strong anti-modernist trends then dominating the American art world — including university museums — one could even call it bold."

Subsequent curators Frederick



Glass and Bottle of Suze (1912), one of Pablo Picasso's earliest collages, is featured in the Janson exhibit at the Gallery of Art.

Hartt, William N. Eisendrath Jr. and others worked with prominent collectors — such as Joseph Pulitzer Jr., Morton D. May, Etta Steinberg, Sydney M. Shoenberg and Mr. and Mrs. Richard K. Weil — to round out Janson's early modern, cubist and expressionist projects.

Highlights from this period include Matisse's *Still Life With Oranges* (1899); Pollock's *Sleeping Effort* (1953); Picasso's *Women of Algiers, Variation 'N'* (1955); and de Kooning's *Saturday Night* (1956).

The accompanying catalog features Eckmann's essay "Exilic Vision," a consideration of Janson's emigration, of his connections with prominent New York-based exile dealers and of the influence both would exert on his views about contemporary art. The book also reproduces a previously unpublished lecture from 1981, in which Janson recalls his years at the University and building the modern collection.

The Gallery of Art is located in Steinberg Hall. Hours are 10 a.m.-4:30 p.m. Tuesday-Thursday; 10 a.m.-8 p.m. Fridays; and noon-4:30 p.m. weekends. The gallery is closed Mondays.

For more information, call 935-4523.

Dance Close-Up • Nuclear Spin Relaxation and Diffusion

"University Events" lists a portion of the activities taking place at Washington University Aug. 23-Sept. 5. Visit the Web for expanded calendars for the Hilltop Campus (cf6000.wustl.edu/calendar/events/) and the School of Medicine (medschool.wustl.edu/events/).

Exhibitions

Friday, Aug. 30

Targets. Christian Jankowski, video artist. Through Dec. 8. Gallery of Art. 935-4523.

H.W. Janson and the Legacy of Modern Art at Washington University in St. Louis. Exhibition from the University collection. Through Dec. 8. 925-4523.

Lectures

Friday, Aug. 23

9:15 a.m. Pediatric Grand Rounds. "Children with Asthma: From the Emergency Department to the Primary Provider." Sharon R. Smith, asst. prof. of pediatrics. Clopton Aud., 4950 Children's Place. 454-6006.

Monday, Aug. 26

Noon. Neurology and Neurological Surgery Summer Research Seminar. "JNK-Independent Activation of c-Jun in Sympathetic Neurons After DNA Damage." Cagri Besirli, graduate research asst.; Brian Pierchala, postdoctoral fellow; Mario Encinas, research associate; all in molecular biology and pharmacology. Schwarz Aud., Maternity Bldg., 1st Floor. 362-7316.

Wednesday, Sept. 4

7:30 p.m. Visiting Artist Lecture Series. Christian Jankowski, video artist. Gallery of Art. 935-4523.

Thursday, Sept. 5

8 a.m. Cancer Research Lecture. Rena Schechter Memorial Lecture in Cancer Research. "Kinase Inhibitors in Cancer." Charles Sawyers, prof. of medicine, UCLA. Clopton Aud., 4950 Children's Place. 454-8566.

4 p.m. Physics Seminar. "Nuclear Spin Relaxation and Diffusion in Disordered and Complex Systems." Colin A. Sholl, prof. of physics, U. of New England, Australia (coffee, 3:45 p.m.). Compton Hall, Rm. 241. 935-6276.

Video artist Jankowski's display Targets at gallery Aug. 30-Dec. 8

By LIAM OTTEN

Christian Jankowski is perhaps the most charmingly democratic artist of his generation, a pedigreed conceptualist who collaborates with children and astrologers, ministers and salesmen, singing customs officials and plain-old pedestrians on videos and installations that blur distinctions between the real and the staged.

This fall, the Gallery of Art will present *Targets*, an exhibition of three of Jankowski's playful yet sometimes disconcerting projects.

The show opens with a reception for the artist from 5-8 p.m. Aug. 30 and remains on view through Dec. 8. The exhibit is free and open to the public.

While on campus, Jankowski will discuss his work for the School of Art's fall Visiting Artist Lecture Series at 7:30 p.m. Sept. 4 in Steinberg Auditorium. The visit is supported in part by the University's Henry L. and Natalie E. Freund Fund.

Jankowski, a German native who divides his time between New York and Berlin, combines the subversive spirit of earlier art movements like Fluxus and Happenings, which emphasized

How to submit 'University Events'

Submit "University Events" items to Genevieve Podleski of the *Record* staff via:

- (1) **e-mail** — record_calendar@aismail.wustl.edu;
- (2) **campus mail** — Campus Box 1070; or
- (3) **fax** — 935-4259.

Upon request, forms for submitting events may be e-mailed, mailed or faxed to departments, and they may fill them out and return them.

Deadline for submissions is noon on the Thursday eight days prior to the publication date.

University Events lists happenings sponsored by the University or its departments, schools, centers, organizations and recognized student organizations. It usually covers a 13-day time period from the Friday publication date to a week from the next Wednesday.

On Stage

Thursday, Sept. 5

8 p.m. Performing arts dept. performance. "Dance Close-Up." Cost: \$14, \$10 for senior citizens, WUSTL faculty, staff and students. (Also Sept. 6, 8 p.m., Sept. 7, 6 and 9 p.m.) Annelise Mertz Dance Studio, Mallinckrodt Student Center, Rm. 207. 935-6543.



And more...

Tuesday, Sept. 4

Noon-1 p.m. Toastmasters event. Washington University Toastmasters for Oratorical Readiness (WUTFOR). 4480 Clayton Ave., Rm. 1140A. 362-7003.

Exhibition

What: *H.W. Janson and the Legacy of Modern Art at Washington University in St. Louis*

Where: Gallery of Art, Steinberg Hall

When: Aug. 30-Dec. 8. Hours are 10 a.m.-4:30 p.m. Tuesday-Thursday; 10 a.m.-8 p.m. Fridays; noon-4:30 p.m. weekends; closed Mondays

Cost: Free and open to the public
The show opens with a reception from 5-8 p.m. Aug. 30.

See *Targets*, Page 6

Orientation provides opportunities for new students

By NEIL SCHOENHERR

The Class of 2006 has arrived on campus, and awaiting the group is a host of new opportunities and exciting experiences.

Orientation 2002, Aug. 22-27, is designed to show students and parents what the University has to offer, said Bill Woodward, director of orientation.

"The goal of orientation is to help students meet each other, engage in some fun activities and introduce them to the campus community," Woodward said. "We also want to show parents the support system we have in place here."

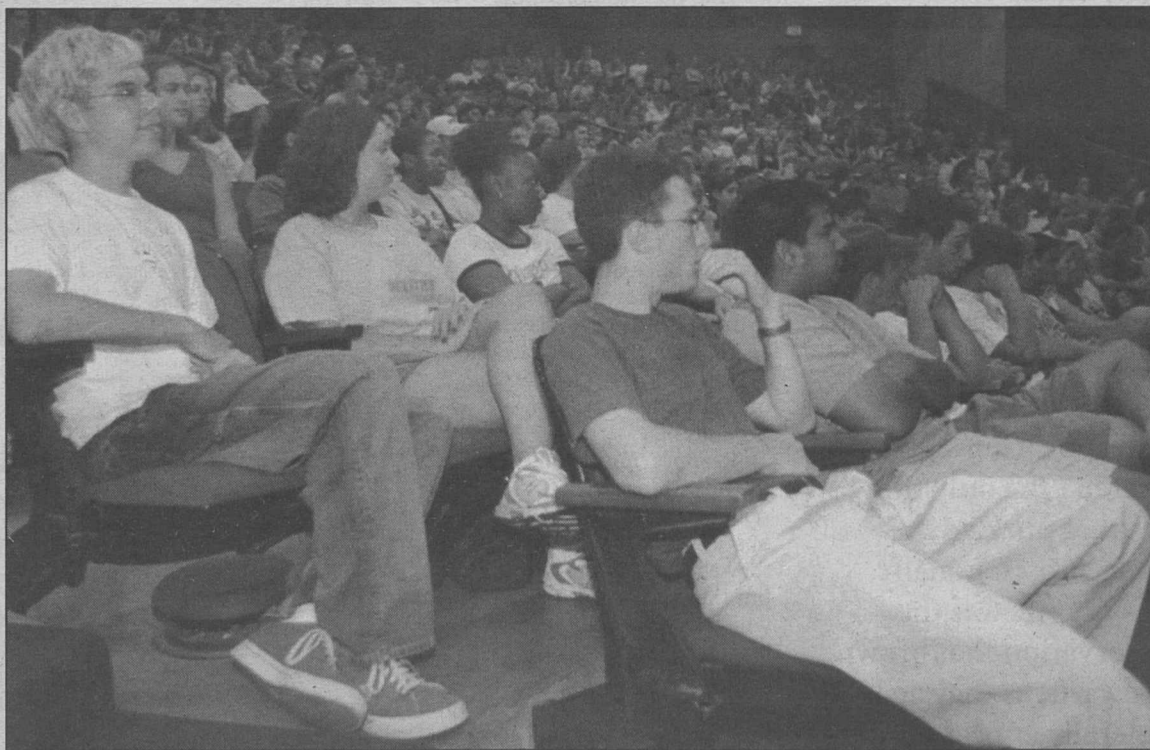
Orientation events Aug. 22 included campus tours and meal-plan review sessions, as well as Convocation — Chancellor Mark S. Wrighton's opportunity to welcome all new students and parents to campus.

An array of departmental open houses is scheduled for today. The open houses give students an opportunity to meet with representatives from the faculty and staff to learn more about the curriculum.

Various placement exams, financial aid meetings and campus ministry dinners will also take place today.

The closing event will be the Club 40 Dance in the South 40 Clock Tower Plaza.

Aug. 24 will feature the annual "Bears, BBQ and Fun" dinner from 4:30-6 p.m. Students and their



Students enjoy "Choices 101 — An Introduction to the First Year Experience," part of last year's orientation, in Edison Theatre in Mallinckrodt Student Center. "Choices" returns for Orientation 2002 with shows at 7 p.m. and 8:30 p.m. Aug. 24 in Edison.

families can enjoy great barbecue food while cheering on the football Bears in an intrasquad scrimmage.

Dean's meetings and residential college receptions will also be held Aug. 24. Dean's meetings provide students with an introduction to academic life at the University and offer ideas and information about planning a

program of study.

The residential college receptions allow students and parents to meet staff members and fellow students.

Highlighting the evening is "Choices 101 — An Introduction to the First Year Experience," presented by upperclass students. A discussion will follow. The presentations will start at 7 p.m.

and again at 8:30 p.m. in Edison Theatre in Mallinckrodt Student Center.

Aug. 25 opens with worship opportunities. The day consists of a full schedule of adviser meetings for all incoming students.

From 6-7:30 p.m. and again from 8-9:30 p.m., students can attend "The Date," an interactive theatrical presentation that

examines the issues of sexual assault and alcohol on college campuses. A discussion will follow.

Aug. 26 features peer advising and more campus orientation. "Freshmen Foundations" will run from 2-4:30 p.m. and Aug. 27 at the same time, both in the South 40 cornerstone classroom in Gregg House. "Foundations" provides an opportunity for students to gain an insider's view of how to succeed in the classroom while at the same time creating a healthy balance outside the classroom.

Students will have the chance to explore one of St. Louis' premier concert venues from 9 p.m.-midnight during an "Evening of Fun at The Pageant." Students will be entertained by some of the University's finest performers, including a special surprise guest.

The schedule Aug. 27 includes meetings, barbecues, picnics and receptions. Featured that evening will be "Faculty Perspectives," a program aimed at giving each new student an opportunity to meet a faculty member and engage in an active dialog. An outdoor movie will be shown at the South 40 Swamp from 9 p.m.-midnight.

Also scheduled during the week are a variety of events designed especially for international, commuter and transfer students.

For more information, call 935-6679 or visit the orientation Web site at orientation.wustl.edu.

Monsanto establishes scholarship in recognition of Nobel laureate

By BARBARA REA

Monsanto Co. has established a University endowed scholarship fund for Arts & Sciences in recognition of Nobel laureate and retired Monsanto researcher William S. Knowles.

The \$50,000 gift will support undergraduates majoring in the life sciences. The first recipients will be named in the fall.

"Washington University is honored to receive this scholarship grant from Monsanto Co. in Dr. Knowles' name," Chancellor Mark S. Wrighton said. "The gift recognizes a great researcher while helping future generations of scientists. Monsanto has supported us for many years in advancing scientific discoveries, and we are grateful for their continued support."

Edward S. Macias, Ph.D., executive vice chancellor and dean of Arts & Sciences, said, "A great university needs exceptional students, and scholarships such as this one enable us to compete

with other top schools to recruit the best and the brightest without regard to financial ability."

The scholarship's namesake is the 2001 recipient of the Nobel Prize in chemistry, which Knowles shared with Ryoji Noyori of Nagoya University in Nagoya, Japan, and K. Barry Sharpless of the Scripps Research Institute in La Jolla, Calif.

The award was for their development of catalytic asymmetric synthesis. Knowles discovered that it was possible to use transition metals to make chiral catalysts for an important type of reaction called hydrogenation, thereby obtaining the desired mirror image form as the final product.

His research quickly led to an industrial process for the production of the L-DOPA drug that is used in the treatment of Parkinson's disease.

Knowles helped open a new field of research in which it is possible to synthesize molecules and material with new properties,

leading to the development of pharmaceutical products such as antibiotics, anti-inflammatory drugs and heart medicines.

Knowles' distinction as a Nobel laureate is the latest in a long series of St. Louis scientists who have received the highest level of recognition.

"The remarkable number of Nobel laureates with a connection to St. Louis institutions speaks to the basic strength and quality of science conducted here," said Thomas A. Woolsey, M.D., director of the division of experimental neurology and neurological surgery in the School of Medicine and president of The Academy of Science of St. Louis.

The academy recently honored Knowles for his contributions to science.

Twenty-one members of the Washington University faculty, beginning with Arthur Holly Compton in 1927, have received a Nobel Prize, predominantly in medicine.

Campus Watch

The following incidents were reported to University Police July 16-Aug. 19. Readers with information that could assist in investigating these incidents are urged to call 935-5555. This information is provided as a public service to promote safety awareness and is available on the University Police Web site at police.wustl.edu.

July 16

1:02 p.m. — Tools were stolen from a construction area outside Bixby Hall. The suspect is described as an African-American male, 35-40 years old, about 6 feet tall, 170-180 pounds with a moustache and beard, and was last seen walking north on Skinker Boulevard.

Aug. 11

2:23 a.m. — A student reported that on April 29, she put several items in a fourth-floor storage area in Small Group Housing No. 10. When she returned August 9, several items were missing. The storage area was not a secure area. Total loss is estimated at \$1,450.

Aug. 13

12:05 p.m. — An unknown person stole a carpet cleaner from the second floor of Phi Delta Theta fraternity house. Total loss is estimated at \$2,400.

Aug. 19

3:31 p.m. — A faculty member stated that she left her laptop computer in her office July 19, and when she returned Aug. 16 the computer was missing. Total loss is estimated at \$3,000.

Additionally, University Police responded to 18 reports of larceny, six reports of trespassing, six auto accidents and one report each of disturbing the peace, property damage, receiving stolen property, assault, judicial violation and fire alarm.

Sports

Football, women's soccer, cross country previews

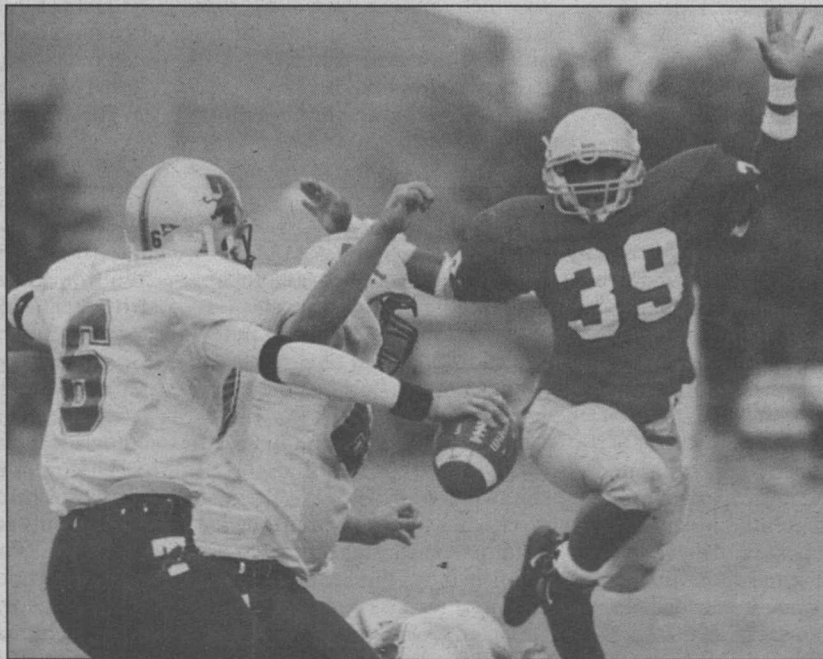
The football team returns 12 starters — eight on offense — and 63 letter-winners as it looks for back-to-back eight-win seasons for the first time in club history. The Bears are also looking for a second-straight University Athletic Association title. The entire offensive line returns, including all-UAA honorees Tim Gronewold, Josh Clark and Mike Lajczok. Just four starters return on defense, including two-time first-team all-UAA middle linebacker Brandon Roberts. The biggest question for the team will be in the defensive secondary, where seven seniors and all four starters need to be replaced.

First-year coach Wendy Dillinger is looking to jump start a women's soccer team that finished 7-7-3 last year, the first time in seven seasons the Red and Green failed to finish above

.500. She has plenty to work with, though, as seven starters return to a club with just one senior. That lone senior is Megan Drews, who tallied 11 points on four goals and three assists in six games before suffering a season-ending knee injury.

Both the men's and women's cross country teams return a strong contingent of runners for the 2002 season. The men are looking for an unprecedented fourth-straight UAA title and are led by senior Bryan Tilton and junior Matt Hoelle. Both earned second-team all-UAA honors a season ago. Juniors Mindy Kuhl and Emily Lahowetz, both first-team all-UAA returnees, lead a women's team that finished third at the UAA Championships and advanced to the NCAA Championships for the second consecutive season.

Two-time first-team all-University Athletic Association middle linebacker Brandon Roberts (39) is a top returner for the Bears, who open their season with a 4 p.m. home matchup Sept. 7 against Simpson College.



FILE PHOTO

Volleyball & men's soccer previews will be included in a future issue of the Record.

Brown dwarf

'Failed stars' demonstrate changing weather patterns

— from Page 1

amounts of egg, flour and sugar, then predicting what they form under different conditions; essentially, thermodynamics tells you whether you're making cookies or cake and rules out bread for lack of yeast.

First discovered in 1995, brown dwarfs pale in comparison to actual stars but do emit a kind of dim glow that enables astronomers to detect and study them. The nearest known one to Earth is about 19 light years away, about 1,200,000 times the Sun-Earth distance.

A specialized rating system describes how cool the coolest dwarfs are and how a typical brown dwarf cools as it ages, changing from "M" for the coolest stars to "L" to "T" for brown dwarfs.

Lodders and her collaborators were most interested in the older and cooler T dwarfs because their more planet-like atmospheres allowed for the possibility of complex, even almost Jupiter-like chemistry.

In one experiment described in their recent article, the group collected a series of data called absorption spectra. Plotted graphically, absorption spectra exhibit "dents" called bands when certain wavelengths of light are absorbed by particular chemical compounds; these bands can then be compared to giant databases of known compounds. In essence, absorption spectra become a kind of "fingerprint," revealing what types of compounds are present in the atmosphere.

Once spectral data were collected, the group sorted them from the hotter L dwarfs down to cooler T dwarfs, thus creating a model sequence of the life cycle of a brown dwarf and how its composition changes through time. Two elements present within brown dwarfs are iron and hydrogen, and under certain conditions they form a gas called

iron hydride, which, however, disappears once it gets too cool.

The simplest example of the "disappearance" process is steam condensing to form liquid water when the steam temperature decreases, but iron hydride does something unusual. Rather than simply condense into a liquid form of itself, iron hydride decomposes into liquid iron, leaving the hydrogen left in the gas.

Researchers predicted that conditions in warmer L dwarfs would favor the existence of iron hydride, and bands in the absorption spectrum confirmed

Reappearing signals weren't the only thing that puzzled the scientists. Equally cryptic was the observation that brown dwarfs, as they age, generally appear fainter, but there is a brief period during which they actually seem to brighten.

the compound's presence. They also predicted that the significant temperature decreases encountered as one progresses down from, say, an L5 dwarf to an L8 dwarf, would force iron hydride to condense into liquid iron, thus reducing its concentration in the atmosphere.

Correspondingly, they expected the iron hydride absorption band to become weaker, which is what they found.

Signal that wouldn't die

The big surprise came as the researchers continued to analyze the spectra through the transition from L to T dwarfs. If iron hydride was beginning to "condense out" in the later L dwarfs, then even more condensation would be expected in the cooler T dwarfs. With this in mind, the group might have

predicted a steadily weaker signal that would eventually fade altogether, but what they saw was a signal that would not die.

"From the chemistry, we would not expect that there is a way to get extra iron hydride back into the system as an object gets cooler," Lodders said. "Once it gets cooler, it condenses out. It's like wintertime in St. Louis — the air is very dry because the cold freezes all the moisture out."

"But interestingly enough, in the cooler brown dwarfs, the iron hydride bands become stronger again, or put another way, they never really disappear. So the question then was, 'How do we explain this?'"

Reappearing signals weren't the only thing that puzzled the scientists. Equally cryptic was the observation that brown dwarfs, as they age, generally appear fainter, but there is a brief period during which they actually seem to brighten.

The researchers hypothesized that perhaps there was something in between the extreme atmospheric conditions of clear vs. cloudy. Based on this new interpretation, the group devised an exploratory model of partial cloud-clearing in cool dwarfs. When they put their model to the test, they found it accurately described the characteristics of a very broad range of brown dwarfs.

The group then surmised that the cooling of the brown dwarfs leads to cloud-clearings caused by atmospheric weather patterns. Those "storms" eventually sweep clouds aside, allowing the bright infrared light trapped below to escape. It is this phenomenon that is believed to be responsible for the bizarre "brightening" effect and for the strong-again iron hydride bands.

"You do not expect iron hydride in the coolest brown dwarfs because it is condensed into the iron liquid clouds," Lodders said. "If it's condensed, it cannot be in the gas. This means if it shows up in the spectrum, the only way you are seeing it is by looking through the clouds. And if you have cloud-clearings, that means you have weather."



The translation of the sign this woman is holding is, "I am ashamed of my lacking self-confidence." The work is from *Shame Box* (1992) by German video artist Christian Jankowski. *Targets*, an exhibition of Jankowski's work, will be on view in the Gallery of Art Aug. 30-Dec. 8.

Targets

Jankowski exhibit at Gallery of Art

— from Page 4

between religion, art and television."

Eckmann noted that Jankowski's pose is borrowed from the Spanish Baroque painter Juan Bautista Maino's *Saint Dominic in Soriano Ri*, in which "the artist is struck down in front of a painting-in-process, only to have the creation completed by an angel."

She added, "Although Jankowski certainly worked with Spencer to prepare his sermon, he doesn't seem to have restricted Spencer's contribution. On the contrary, Spencer's sermon appears unscripted."

For the three-channel video *Point of Sale* (2002), Jankowski enlists the words of New York management consultant Clayton Press, who interviews art dealer Michele Maccarone and electronics dealer George Kunstlinger (neighbors in Manhattan's Chinatown) about their respective customers, business plans and financial strategies.

The twist is that each dealer delivers the other's answers, thus creating a slightly mischievous picture of contemporary art and 220-volt electronics as equally valid (if essentially marginalized) products of the capitalist economy.

Shame Box (1992), one of Jankowski's earliest works, is a video and series of photographs in which random passers-by from the streets of Hamburg, Germany, sit alone in a store window displaying handmade signs describing what she or he is most ashamed of.

One woman is ashamed of being a German citizen; one man is ashamed of his body; another man is ashamed of his re-education as a real estate agent. The dissonance between the subjects' formal presentation and the deeply personal revelations is both funny and affecting, and is subtly juxtaposed against the urban surroundings, which can be seen reflected in the panes of glass. "Although Jankowski blurs the boundaries between art and mass culture, the groups or individuals he chooses as his collaborators are only at first alien to an art context," Eckmann said. "In fact, Jankowski uses a religious group to think about the spirituality of art, a management consultant to analyze art's commodity value, and individuals on the street to rethink the genre of portraiture."

Born in Göttingen, Germany, in 1968, Jankowski has displayed his work in numerous solo and group exhibitions in the United States and Europe. He first came to international attention at the 1999 Venice Biennale with the video *Telemistica*, in which local tarot card readers predicted the success of his then-unborn entry.

Other notable works include *The Matrix Effect* (2000), in which young children read the words of internationally known artists; *Singing Customs Officers* (1999), in which officials belt out their national anthems; and *My Life as a Dove* (1996), which documents the artist's transformation by a stage magician.

The Gallery of Art is located in Steinberg Hall. Hours are 10 a.m.-4:30 p.m. Tuesday-Thursday; 10 a.m.-8 p.m. Fridays; and noon-4:30 p.m. weekends. The gallery is closed Mondays.

For more information, call 935-4523.

Employment

Use the World Wide Web to obtain complete job descriptions. Go to hr.wustl.edu (Hilltop) or medicine.wustl.edu/wumshr (Medical).

Hilltop Campus

Information regarding positions may be obtained in the Office of Human Resources, Room 130, West Campus. If you are not a WU staff member, call 935-9836. Staff members call 935-5906.

Research Technician 000256

Senior Medical Sciences Writer 010108

Planned Giving Officer 020086

Director, Univ. Development Project & Asst. Director, Principal Gifts 020208

Coordinator, Program for Technical Assistance 020218

Research Technician 020314

Career Development Specialist 020317

Engineering Collections & Services Asst. 020337

Occupational Health Safety Technologist 020339

Registered Nurse 020347

Staff Psychologist 020351

Senior Investment Analyst 020352

Loan Processor 020355

Mechanic (Bargaining Unit Employee) 020358

Administrative Assistant 020364

Assoc. Dir, Corporate Relations 020365

Regional Director of Development 020367

Administrative Secretary 020371

Career Services Recruitment Coord. 020378

Career Dev. Specialist - Grad Students 020381

Internship Coordinator 020382

Health Services Physician 030009

Assistant Director of Admissions 030011

PC Support Technician 030016

Purchasing and Receiving Assistant 030017

Application Processor 030022

Admin. Asst. & Alternative Workflow Coordinator 030023

Academic Coordinator 030030

Senior Contract Management Liaison 030032

Career Center Events Specialist 030034

Asst. Outreach Coordinator 030036

Project Assoc. 030039

Computer & Data Technician 030040

Contract Manager 030041

Admin. Aide (Professional Rater) 030042

Accounting Asst. 030046

Payroll Services Representative 030049

Clinical Program Coordinator 030051

School Accounting Manager 030053

Systems Manager 030054

Admin. Asst. 030055

Admin. Asst. for Publications and Summer School 030058

Animal Caretaker 030060

Deputized Police Officer 030062

Admin. Asst., Editorial Office 030063

Physical Therapist 030064

Admin. Asst. to the Dean 030068

Senior Site Operator 030069

Medical Campus

This is a partial list of positions at the School of Medicine. Employees: Contact the medical school's Office of Human Resources at 362-7196. External candidates: Submit résumés to the Office of Human Resources, 4480 Clayton Ave., Campus Box 8002, St. Louis, MO 63110, or call 362-7196.

Research Technician I 021549

Medical Asst. II 030203

Clerk II 030204

Phlebotomist 030193

Medical Asst. I 030182

Insurance, Billing, and Collections Asst. II 030221

Insurance, Billing, and Collections Asst. III 030222

LPN 030223

Research Technician I 030224

Patient Billing Services Representative I 030225

Professional Rater I 030227

Research Patient Coordinator 030228

Medical Secretary I 030229

Research Assoc., Intestinal Lipoprotein Biosynthesis 030230

Medical Transcriptionist 030231

Medical Secretary III 030232

Research Technician II 030233

Health Physicist I 030236

Programmer I 030237

Occupational Health and Safety Officer 030238

Grant Analyst 030242

Secretary II 030243021334

Custodian 021335

Grant Analyst 021336

Epilepsy

— from Page 1

instead, they developed epilepsy.

Mice without astrocyte *TSCI* began exhibiting abnormal movements and posture around two months after birth. They occasionally became rigid, fell over and began to shake their heads and limbs, behaviors characteristic of seizures.

To determine if these episodes were in fact seizures, the team recorded brain activity in affected animals and in normal mice using electroencephalography (EEG). EEG recordings verified that the affected mice had frequent seizures and the normal mice did not.

Moreover, brain slices from these mice lacking *TSCI* in astrocytes revealed other abnormalities. The animals had larger brains with far more astrocytes.

Most surprisingly, deleting *TSCI* in astrocytes evoked changes in another type of brain cell: neurons. Within the first five weeks after birth, mice had abnormally organized collections of neurons in the hippocampus — a region involved in human epilepsy.

"In our model, the loss of *TSCI* expression in astrocytes translated over time into defects in neuronal function and eventually led to epilepsy in mice," Yamada said. "We're very excited about this discovery because it may help us understand how seizure disorders develop, both in TSC and in other kinds of epilepsy."

Olin School launches knowledge, research Web site

By Robert Batterson

A new Web site featuring the knowledge and research of the Olin School of Business has been launched, Dean Stuart I. Greenbaum, Ph.D., announced.

"Discovery@Olin" is at olin.wustl.edu/discovery. Every six weeks, the site will be refreshed with new, early-stage research published by Olin School faculty, the latest business trends, and timely news and views from Olin School faculty and programs.

"The stories and images that

you will encounter on Discovery@Olin reflect Olin's teaching and research mission," Greenbaum said. "I hope you'll join us to learn more about the latest research and business trends alongside Olin's news and views."

Discovery@Olin includes regular features, a searchable database of faculty working papers, links to programs and business school centers, and a newsroom for journalists to get a complete update on current news and information at the Olin School.

Notables

Introducing new faculty members

The following are among the new faculty members on campus. Others will be introduced periodically in this space.

Steven M. Devine, M.D., joins the School of Medicine as assistant professor of medicine in the Division of Oncology, Department of Medicine. His research interests include the use of stem cells to treat cancer and other diseases. He earned his medical degree from the University of Massachusetts in 1987 and completed his residency at Michael Reese Medical Center in 1990. He pursued a fellowship in hematology-oncology at the University of Chicago Hospital and Emory University Hospital. He comes to Washington University from the University of Illinois at Chicago where he directed the Blood and Marrow Transplant Program.

Shaorong Zhang, M.D., joins the School of Medicine faculty as a research assistant professor of medicine in the Division of Infectious Diseases after coming to the medical school in 1995 as a postdoctoral fellow. His research interests include the immunopathology and molecular diagnostics of the parasitic disease filariasis. He earned his medical degree and trained in immunology and parasitology from Jiangxi Medical College and served his residency at Huangbu Central Hospital, Jiangxi, in China. Prior to coming to the University, Zhang managed a World Health Organization/World Bank schistosomiasis control program for the Jiangxi Provincial Department of Health in China.

Geoff Childs, Ph.D., joins the Department of Anthropology in Arts & Sciences as assistant professor. He earned a doctorate from Indiana University in 1998 and a bachelor's degree from the University of Colorado in 1987. He presently is completing a three-year Mellon Post-Doctoral Fellowship in Anthropological Demography at Australian National University. His research interests are anthropological demography, historical demography, fertility, aging, and family systems. He works in Tibet and Nepal.

C. Warren, Ph.D., joins the School of Medicine faculty as assistant research scientist in the Department of Genetics. He is director of the Microarray Core Facility at the Genome Sequencing Center. His research interests include gene expression, genome biology and bioinformatics. He earned a bachelor's degree from Oklahoma State University in 1984, a master's from Clemson University in 1986 and a doctorate from the University of Missouri in 1990. He comes to the School of Medicine from Incyte Genomics, where he led a multidisciplinary group that specialized in genomic-based research services.

Of note

Aaron DiAntonio, M.D., Ph.D., assistant professor of molecular biology and pharmacology in the School of Medicine, received a 2002 McKnight Scholar Award in recognition of his research into the development of connections between nerve cells. The award honors young scientists engaged in innovative research designed to bring science closer to preventing, diagnosing and treating diseases in the brain. ...

Kevin Z. Truman, Ph.D., professor and chair of civil engineering, and **Shirley J. Dyke, Ph.D.**, associate professor of civil engineering, have received a three-year, \$1.8 million grant from the National Science Foundation for a study titled "Partnership for Math, Science and Engineering Instruction Through Computer Visualization." The outreach program, which will fund 10 graduate fellows and 10 undergraduate teaching assistants, will involve sixth-graders from Webster Groves' Steger Sixth Grade Center and eighth-graders from St. Louis' Gateway Middle School. ...

Maurizio Corbetta, Ph.D., was recently appointed section head of the stroke and brain injury rehabilitation service. ...

Jin-Yu Shao, Ph.D., assistant professor of biomedical engineering, has received a five-year, \$1.54 million award from the National Heart, Lung, and Blood Institute for a project titled "Biomechanics of Neutrophil-rolling on the Endothelium." ...

Roger D. Chamberlain, D.Sc., associate professor of electrical engineering, has received the 2002 Big Fish Award from the Association of Graduate Engineering Students. The annual award recognizes teaching excellence and is based on graduate student votes. ...

Jia G. Lu, Ph.D., assistant professor of electrical engineering, has received a \$374,666 National Science Foundation Career Award to fund a study titled "Single Spin Transistors: Science, Application and Education." The funding is for five years and started June 1. ...

Michael Wyession, Ph.D., associate professor in earth and planetary sciences, has received a three-year, \$300,000 grant from the National Science Foundation for research titled "Mapping Small-Scale Structure Above the Core-Mantle Boundary." ...

Daniel W. Moran, Ph.D., assistant professor of biomedical engineering, has received a five-year, \$610,000 subcontract from the Department of Defense's Advanced Research Projects Agency for a study titled "Human Augmentation Through Brain Machine Interfaces." Moran also has received a three-year, \$240,000 grant from The Whitaker Foundation for a study titled "Motor Cortical Represent-



Bird's-eye view If you've noticed a hawk circling the Hilltop Campus recently, you aren't alone. The bird in question (above), suspected to be a red-tailed hawk, sat still long enough for Lisa Siddens to snap a quick photo. Siddens, assistant to Edward S. Macias, Ph.D., executive vice chancellor and dean of Arts & Sciences, took the photo from Macias' office in South Brookings Hall.

tation of Position and Velocity in Volitional Arm Movements." ...

David S. Sept, Ph.D., assistant professor of biomedical engineering, has received a five-year, \$1.4 million grant from the National Science Foundation for a study titled "Understanding the Protein-Protein Interaction Underlying Actin-Based Cell Motility." ...

Frank C-P Yin, M.D., Ph.D., chair and the Stephen F. and Camilla T. Brauer Professor of Biomedical Engineering, is chair-elect of the College of Fellows of the American Institute for Medical and Biological Engineering (AIMBE). His one-year term as chair begins in March 2003. Yin also has been elected to the board of trustees of the Biomedical Engineering Society and to the AIMBE board of trustees. He will serve a three-year term on each board. ...

Raymond L. Hilgert, Ph.D., professor emeritus of management and industrial relations in the Olin School of Business, has been inducted into the Small Business Administration Hall of Fame and received a Lifetime Achievement Award from the St. Louis district. ...

Ramesh K. Agarwal, Ph.D., the William Palm Professor of Engineering, has received the American Institute of Aeronautics and Astronautics Sustained Achievement Award. The national-level award recognizes Agarwal's years of technical achievements as well as his service activities. ...

Renee M. Cunningham-

Williams, Ph.D., research assistant professor of social work in psychiatry in the School of Medicine, recently was recognized by the Institute for Research on Pathological Gambling and Related Disorders for presenting the "Best Poster" at the 2001 annual conference held in Las Vegas. Along with her co-authors, Linda B. Cottler and Samantha J. Books, Cunningham-Williams presented her work on the development of a diagnostic module for assessing problem gambling. ...

Heather Flanagan Street, Ph.D., of the Department of Anatomy; **Jeffrey Hiken, Ph.D.**, of the Department of Medicine; **Brenda Kirchoff, Ph.D.**, of the Department of Psychology; **John Swarthout, Ph.D.**, of the Department of Cell Biology; and **James Watters, Ph.D.**, of the Department of Medicine have been named 2002 W.M. Keck Postdoctoral Fellows in Molecular Medicine by the Division of Biology and Biomedical Sciences. Each year, the division selects four or five outstanding scientists in biomedical research with less than two years of postdoctoral research experience and awards each a fellowship of \$20,000 for partial stipend support. This program was established and endowed at the School of Medicine in 1988 with a \$900,000 grant from the W.M. Keck Foundation. ...

Timothy Meyer, graduate research assistant in medicine, has received a five-month, \$5,000 grant from the American Federation for Aging Research

for a study titled "The Effects of 3-month EHEA Supplementation in Older Adults on Vascular Reactivity." ...

Thomas A. Ferguson, Ph.D., associate professor of ophthalmology and visual sciences, has received a one-year, \$55,000 grant from Research to Prevent Blindness for the RPB Lew R. Wasserman Merit Award. ...

Kevin E. Yarasheski, Ph.D., associate professor of medicine, has received a one-year, \$87,467 grant from the Campbell Foundation for research titled "Rosiglitazone and Exercise Training: Effects on HIV-Infected People With Insulin Resistance, Hypertriglyceridemia, and Adipose Tissue Maldistribution." ...

Anne Cross, M.D., associate professor of neurology, has received a one-year, \$33,000 grant from the National Multiple Sclerosis Society for research titled "Study of Cytokine Signaling Protein Expression in People With MS and Controls." ...

Michael R. DeBaun, M.D., assistant professor of pediatrics, has received a three-year, \$100,000 grant from the Dana Foundation for research titled "The Utility of Diffusion Tensor Imaging Technique to Identify Cerebral Ischemia in Children With Sickle Cell Disease." ...

Farrokh Dehdashti, M.D., associate professor of radiology, has received a two-year, \$249,998 grant from The Susan G. Komen Breast Cancer Foundation for research titled "Predicting Response to Hormone Therapy of Breast Cancer."

Tate named chair of education department

By NEIL SCHOENHERR

William Tate, Ph.D., was named professor and chair of the Department of Education in Arts & Sciences July 1.

Tate succeeds James V. Wertsch, Ph.D., the Marshall S. Snow Professor in Arts & Sciences, who served as department chair since 1995. Wertsch will remain a professor in the department.

Tate most recently served as the William and Betty Adams Chair and Professor of Mathematics Education and Mathematics at Texas Christian University.

He has authored more than 40

journal articles and book chapters focused on school mathematics, school science, technology education, and urban school reform.

Tate is the co-author of an elementary mathematics textbook series. He has also served as an editor of the *American Educational Research Journal*.

Tate earned a doctorate in curriculum and instruction from the University of Maryland. He also holds a master's degree in mathematical sciences from the University of Texas at Dallas and a bachelor of science degree in economics from Northern Illinois University.

Obituaries

Jacobsen, 62

Thomas H. Jacobsen, former University trustee and former chairman, president and chief executive officer of Mercantile Bancorporation, died Saturday, July 20, 2002, of leukemia at Barnes-Jewish Hospital. He was 62. A public memorial service will be held at 9:30 a.m. Sept. 28 in Graham Chapel.

Jehle, 83

LaVerne Simon Jehle died Tuesday, July 30, 2002, at

St. Mary's Health Center in Richmond Heights, Mo., of complications from pneumonia. She was 83. Jehle taught fashion illustration in the School of Fine Arts for many years.

Wiegand, 85

Herbert C. Wiegand died Tuesday, July 16, 2002, at Missouri Baptist Medical Center in Town & Country, Mo., of complications from pneumonia. He was 85. Wiegand taught in the School of Medicine for several years.

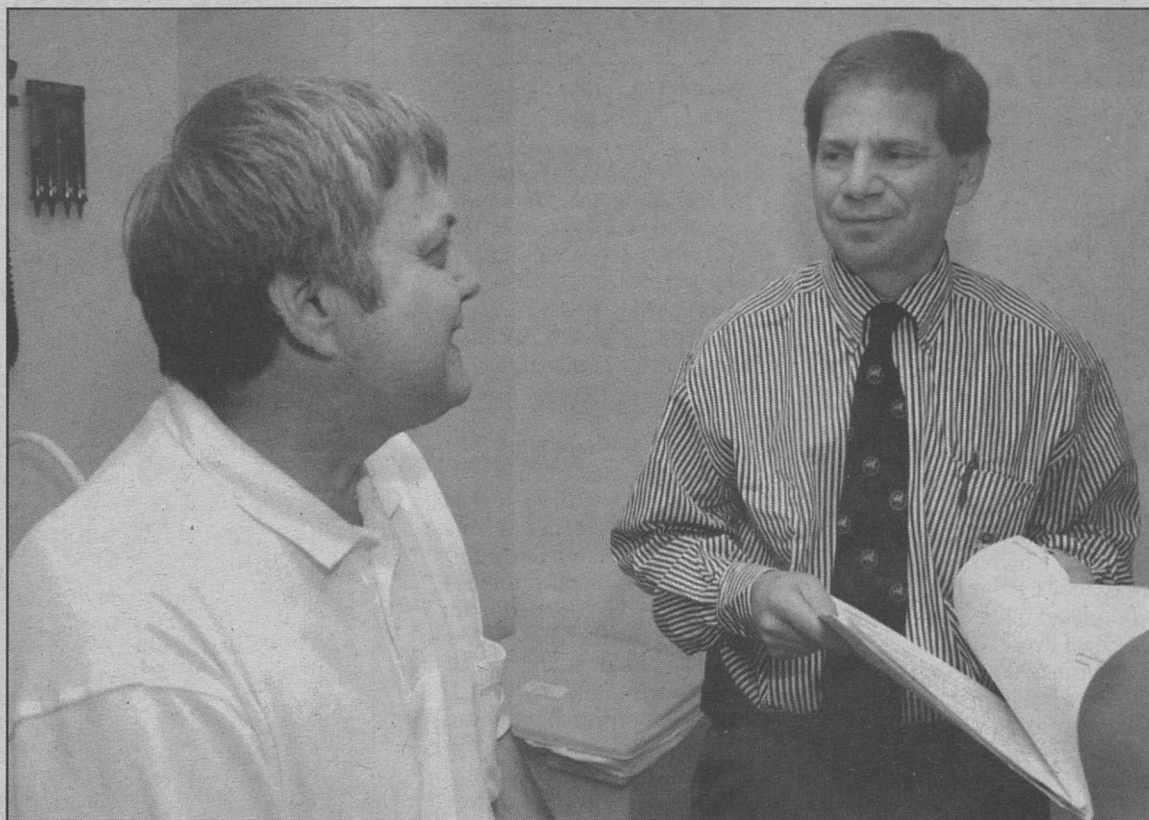
Washington People

It's remarkable that Jeffrey A. Lowell, M.D., finds time to regularly watch his two daughters play soccer.

Aside from being a renowned liver and kidney transplant surgeon, Lowell also works in the St. Louis mayor's office, has trained with the St. Louis Police Department to help with hostage situations, practices karate and periodically writes for the *St. Louis Post-Dispatch*.

"I have a hard time saying no," Lowell said. He tries to make a positive impact in all his endeavors, which include serving as associate professor of surgery and of pediatrics and associate director of abdominal transplantation in the School of Medicine and chief of pediatric transplantation at St. Louis Children's Hospital.

"I really feel like I've been able



Jeffrey A. Lowell, M.D. (right), associate professor of surgery and of pediatrics and associate director of abdominal transplantation, talks with patient Terry Staruch during a checkup after a kidney transplant. Lowell tries to increase public awareness of the need for new ways to improve the state of organ donation and transplantation.

Innovating transplantation techniques

Jeffrey A. Lowell, M.D., also builds public awareness of the need for organ donations

BY DANIEL SIEGEL

to fulfill my need for *Tzedakah*, a Hebrew word which means good deed or charity," he said. "My two daughters are my greatest legacy. When they look back on my life, I not only want them to recognize that I worked hard, but more importantly, that I worked hard to help other people."

New techniques for new challenges

Lowell's fast-paced lifestyle is well suited to the type of cutting-edge medicine he performs. For example, only about half of the organs Lowell transplants are from living donors. For the rest, he typically has to fly somewhere in the middle of the night to extract the organ from someone who recently passed away.

In addition to the excitement of these last-minute trips, the newness of the field allows organ transplantation experts to be innovative.

"This type of critical-care medicine allows a lot of room for brainstorming," Lowell said. "Because of all the technical challenges involved, the action and pace of it really keep me on my toes."

Room for experimentation has allowed Lowell and his colleagues

to pioneer new techniques in transplantation. Increasing demand for organs coupled with consistently low organ supplies has led to a scarcity of donor organs. Lowell hopes to alleviate this shortage using new surgical approaches.

For example, Lowell was part of the first team in St. Louis to perform a double liver transplant, in which a donor liver was split between two recipients. He also

father, the emotional highs of 'winning' are magnified. Luckily, we win a lot — otherwise, I don't know if I would like it."

In fact, the program has one of the highest success rates in the country for liver and kidney transplantation. Colleague I. Jerome Flance, M.D., special associate for community development and professor emeritus of medicine, said Lowell has played a significant role in

"Dr. Lowell is a superb surgeon. An author and co-author of numerous scientific writings in his field, he certainly represents the best tradition of his profession and of the School of Medicine in his concern for health care, both in the hospital and the St. Louis community at large."

I. JEROME FLANCE

was one of the first surgeons in the region to transfer part of the liver from a healthy adult into an adult with liver failure.

Lowell also tries to increase public awareness of the need for new ways to improve the state of organ donation and transplantation. He already has appeared on several national news programs, including *Today*, *NBC Nightly News*, *World News Tonight* on ABC and *The Early Show* on CBS.

Going for the win

Like his father, being a doctor always was in the cards for Lowell. But his chosen specialty is quite different from his father's focus of pathology.

Unlike many other specialties, in which treatment often is long and arduous, liver and kidney transplantation seem more like magic than medicine.

"I went into surgery because I like fixing things," Lowell said. "But I went into transplantation because I like the immediate gratification of it. We get people who are basically dead when they arrive here, but after a liver or kidney transplant, they are on the road to recovery and typically return home in about four or five days."

Although the majority of transplants Lowell performs are on adults — more than 100 yearly — he admits that his pediatric patients are special to him.

"I really like taking care of kids and their families," he said. "As a

shaping the program in his nine years at the University.

"Dr. Lowell is a superb surgeon," Flance said. "An author and co-author of numerous scientific writings in his field, he certainly represents the best tradition of his profession and of the School of Medicine in his concern for health care, both in the hospital and the St. Louis community at large."

Outside the hospital

Lowell's dedication to the medical field has caught the attention of several other local figures.

"I first met Dr. Lowell on a television show that I hosted," said Greg Freeman, host of *The Greg Freeman Show* on KWMU radio and *Post-Dispatch* columnist. "For all the work he does, I found him to be very down to earth and without airs. Little did I know that a few years later, he would be my own surgeon."

Since receiving a kidney transplant, Freeman has written and inspired several articles in the *Post-Dispatch* about the importance of organ transplantation and other related issues. Lowell himself has contributed to the series.

One wall in his office is lined with articles he wrote on issues that range from current organ shortages to a critique on the validity of the movie *John Q*, in which a desperate father who is

unable to afford his son's transplant takes an emergency room hostage in an attempt to save his son's life.

Local political representatives also have recognized Lowell's efforts and expertise. During the anthrax scare this year, Lowell casually commented to a friend at the *Post-Dispatch* that St. Louis is ill-prepared to deal with potential threats. Eventually, his quote found its way to St. Louis Mayor Francis Slay, who in turn appointed Lowell to spearhead a new disaster-response program.

Lowell now is chief of St. Louis' Metropolitan Medical Response System, dedicated to better preparing and coordinating the St. Louis region's medical response system in the event of any disaster, natural or man-made.

The team already has repaired and replaced all of the emergency radios in hospitals in the metropolitan area and is in the process of developing a mutual-aid agreement between area hospitals in the event of a disaster. The program even caught the attention of Sen. Jean Carnahan, who commended Lowell and the program's success in a recent speech in the U.S. Senate.

Timothy J. Eberlein, M.D., the Bixby Professor of Surgery and chair of the department and the director of the Alvin J. Siteman Cancer Center at the School of Medicine and Barnes-Jewish Hospital, said, "Jeffrey Lowell is one of those rare individuals who is able to do everything extraordinarily well. All his pursuits are done both energetically and meticulously. There truly are few people like him at any institution."

Jeffrey A. Lowell, M.D.

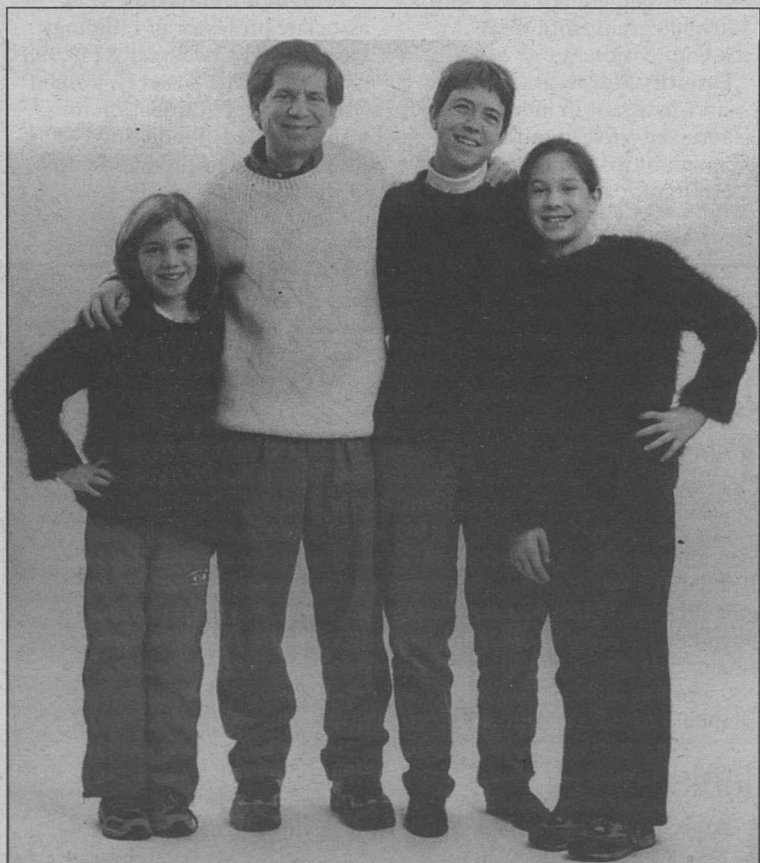
Academic title: Associate professor of surgery and of pediatrics and associate director of abdominal transplantation

Born and raised: New York

Family: Wife, Anne Kessen Lowell; daughters, Becca and Johanna. "My wife, Anne, is definitely my role model," Lowell said. "She is the only person I know that does so much and still has everything turn out right without even losing her cool. I think maybe I'm a little envious."

Hobbies: Karate, running, target-shooting, watching daughters' soccer games or concerts.

"There's nothing quite like being with your kids on a ski lift and being able to look at an entire valley below you," Lowell said. "It's one of the things that I enjoy most."



Johanna (left), 9; Jeffrey Lowell; Anne Kessen Lowell; and Becca, 11.