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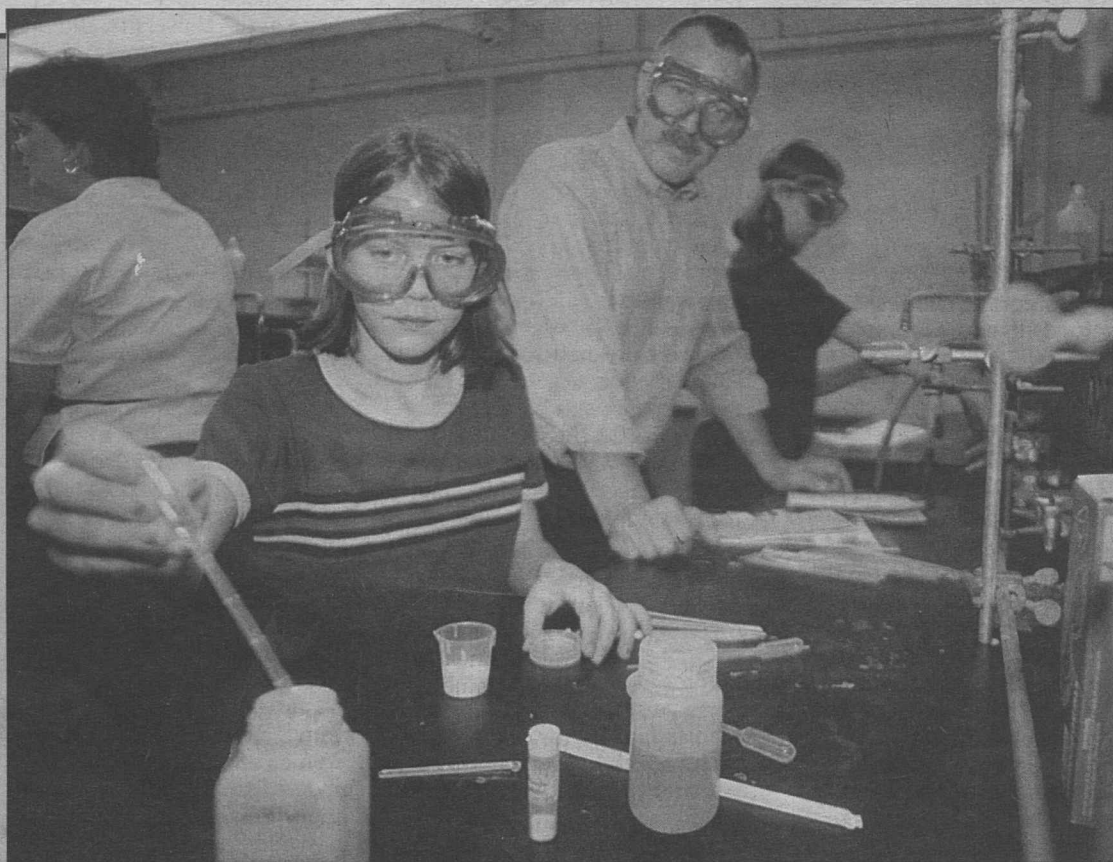
April 29, 1999

Record

Volume 23 No. 30



Washington University in St. Louis



Widening horizons Bill Darte, senior technical associate at the Center for the Application of Information Technology, observes his daughters, Amy, 10 (foreground), and Erin, 13, at work in a chemistry lab during the April 22 Take Our Daughters to Work Day. Some 75 girls came to work at the University with their moms and dads in the annual program that encourages young women to aim high in their career aspirations. University volunteers organized more than 15 events throughout the day, introducing participants to subjects from science to performing arts, medicine to business.

Law clinics confront tough issues

By ANN NICHOLSON

Immersing themselves in contested child custody cases, adult and child orders of protection and child support hearings, students in the School of Law's Civil Justice Clinic learn effective lawyering skills — and make a difference in the lives of neglected children and adult domestic abuse victims.

"The clinic exposes students to people who are living in incredibly dire circumstances," said Jane H. Aiken, J.D., professor of law, who has taught the clinic the last two years. "The students become aware of the role that they as lawyers can have in rectifying those situations — getting an order of protection to get the

woman away from the man who is abusing her, helping her get into a shelter, giving her that lift so that she can focus beyond the day-to-day and find a way to change her life and the lives of her children."

Working in small teams, the law students tackle six to 10 cases apiece throughout the semester. Each student spends a minimum of 24 hours a week in client-related work, from conducting fact investigation to interviewing and counseling clients to drafting pleadings. They also gain first-hand experience with pretrial and trial procedure, as they identify and interview witnesses, subpoena documents, conduct direct and cross examinations and negotiate settlements in the

St. Louis City and County Family Courts.

Under Aiken's leadership, the 25-year-old clinic has grown in both scope and depth. This semester, 15 students — double the usual enrollment — participated in the clinic under the supervision of Aiken; Kimberly Jade Norwood, J.D., professor of law; and Leslie Freeman, J.D., adjunct professor of law.

A new arrangement with judge Thomas Frawley of the St. Louis City Family Court allows clinic students to serve as guardians ad litem in contested custody cases, child order of protection cases and adult order of protection cases involving at-risk children. The court appointments not only fill a

See **Law clinic**, page 5

New find in Portugal

Skeleton defies theories, suggests modern humans' Neandertal roots

By ANN NICHOLSON

A 24,500-year-old skeleton found in Portugal shows Neandertals and early modern humans intermixed and produced children, said Erik Trinkaus, Ph.D., professor of anthropology in Arts and Sciences. Trinkaus is the principal paleontologist examining a 4-year-old child's skeleton that was excavated from the Abrigo do Lagar Velho, near Leiria, Portugal, about 90 miles north of Lisbon.

Radiocarbon dating recently confirmed the age of the skeleton, indicating the child lived 4,000 years after the time that Neandertals and early modern humans coexisted on the Iberian Peninsula, said Trinkaus, a renowned paleontologist who has written several books and numerous articles on Neandertals and early modern humans. The discovery challenges the commonly held theory that the Neandertals were not direct ancestors of modern humans.

"This find tells us what it means to be human," said Trinkaus, who is working with João Zilhão, Portugal's director of antiquities and head of the excavation team. "Many people like to distance themselves categorically from Neandertals. This skeleton, which has some characteristics of Neandertals and others of early modern humans, demonstrates that early modern humans and Neandertals were not all that different. They intermixed, interbred and produced children."

Trinkaus believes the child — likely a boy — was not the isolated offspring of one Neandertal and early modern human couple. "This is not a unique love child," he said. "This skeleton shows that the results of admixture were in the population 4,000 years after the generally recognized transition from Neandertals to early modern humans in southern Iberia. The

age of the skeleton indicates this child was the result of an already extensively mixed population."

The skeleton is the first archaeological find demonstrating characteristics of both Neandertals and early modern humans, Trinkaus said. The child's stocky trunk and short leg bones are similar to those of the Neandertals, while its prominent chin and modest-sized front teeth are similar to those of early modern humans. Other aspects of the skull and features of the arms and pelvis show a mosaic or blend of Neandertal and early modern human features, the pattern seen in individual hybrids between modern species.

The Lagar Velho find also presents the first evidence of



This 24,500-year-old skeleton, found in Portugal, has both Neandertal and early modern human characteristics, demonstrating the two groups intermixed and produced offspring.

Paleolithic burial practices in southern Iberia. The skeleton was found with an ornamental shell and was heavily stained with red ochre, indicating a wrap around the body. These practices are commonly associated with contemporaneous ritual burials of

See **Skeleton**, page 6

Clowning around

Husband-wife team bring joy to the sorrowful

By BARBRA RODRIGUEZ

For Jane Abendschein and Dana Abendschein, Ph.D., time off from work is just an excuse to help clowns-in-training learn to apply makeup at the kitchen sink. Or to moonlight as their own favorite alter egos: Belle and Liberty, white-faced clowns decked in blazing blue, cherry red and white costumes who help bring joy to families hit hard by life's struggles.

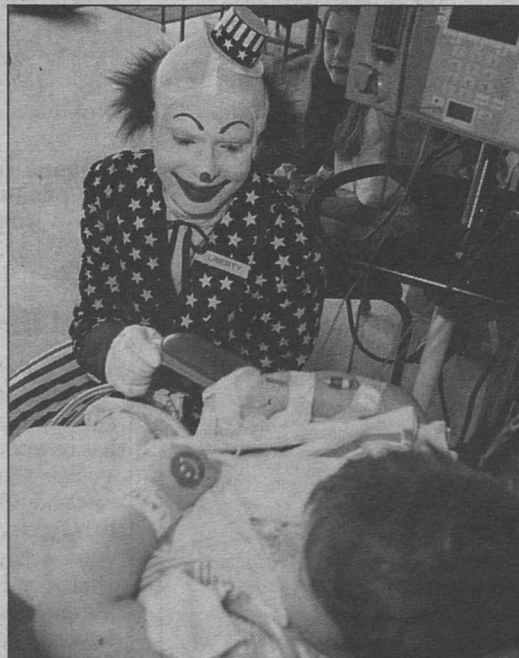
The administrative assistant and the medical researcher at the School of Medicine have joined forces for 10 years to visit inmates at nearby prisons, to brighten hospital patients' days and to teach the artistry and history of

clowning. Dana has done it for even longer, sometimes traveling overseas for clown activities. "We go wherever the need for diversion and laughter — the medicines we provide — are needed most," said Dana, an associate professor of medicine and of cell biology and physiology.

Ask why they perform "in clown" and you'll hear about helping others forget loneliness, illness or despair. The tension-filled atmosphere of a maximum security prison soon dissolves when the pair start their skits, for example. "You can almost hear [the tension] shatter," Dana said, "and after they laugh, they'll just say, 'Thank you.'"

The Abendscheins had the same effect recently, visiting the playroom at St. Louis Children's Hospital. As Belle and Liberty, they moved quietly among children resting at pint-sized tables or in wheel chairs, letting them adjust to their bright outfits while telling jokes.

Once the crowd had warmed up, Belle gave out smiley face stickers and Liberty "jumped" into a swimming pool. See **Clowning**, page 3



Dana Abendschein entertains Wesley Williams, 4, at St. Louis Children's Hospital.

Women's Society makes student's dream a reality

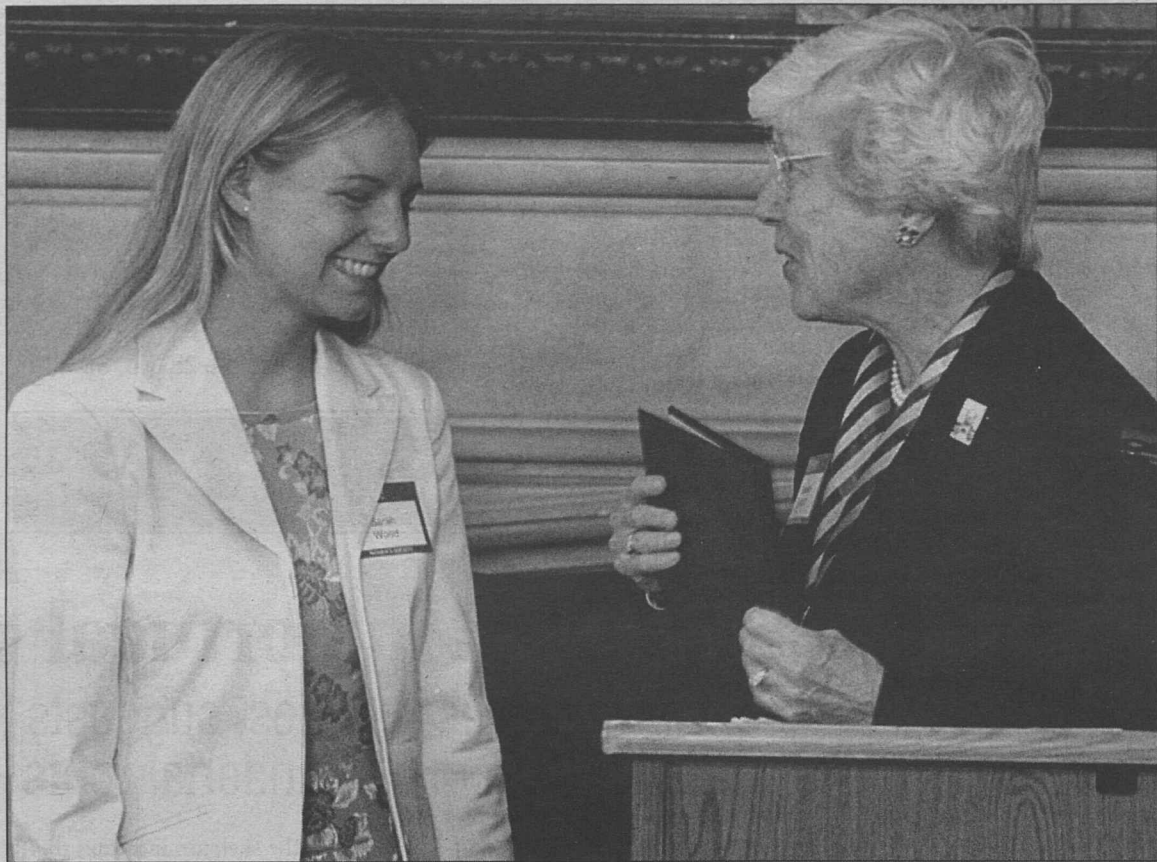
By CHRISTINE FARMER

Thanks to the Women's Society of Washington University, Sarah Wood, a student at the Meramec Campus of St. Louis Community College, will be attending school here on a full tuition scholarship.

Wood's selection as the 24th scholarship recipient was announced April 21 at the society's annual meeting. Society member Julia Rapp introduced Wood to the audience of almost 80 people.

"She is a shining example of what the Women's Society wants to promote — excellence, drive

See **Opportunity**, page 2



Elizabeth "Ibby" Danforth presents Sarah Wood with the 1999 Elizabeth Gray Danforth Scholarship, a full-tuition grant for a community college transfer student from the Washington University Women's Society, at the society's annual meeting April 21.

Two stand-out students win leadership award

By CHRISTINE FARMER

Graduating seniors Amy Caudy and Tamar Magarik received the 1999 Women's Society Leadership Award April 21 in recognition of their outstanding accomplishments and contributions to the University and the community.

Each received an engraved clock from society member Marilyn Sachs at the group's annual meeting. This is the second year the award was given.

Caudy was nominated for the award by Craig S. Pikaard, Ph.D., associate biology professor in Arts and Sciences. She is a biochemistry major and a math minor. Next year she will enter a Ph.D. program at the Cold Spring Harbor Biological Institute, N.Y., and plans to become a professor, teaching and doing basic research.

"It was really pretty exciting," Caudy said. "My boss nominated me, and he was so proud when he found out I was chosen."

Magarik was nominated for the award by Max J. Okenfuss, Ph.D., associate history professor in Arts and Sciences, whom she considers her mentor. She is a political science and Russian studies major with a minor in history and an emphasis in economics. Next year she plans to work on Vice President Al Gore's presidential campaign.

"I am so honored because it is chosen by women for women, and also because it's leadership, which says a lot about my future," Magarik said. "I hope I can live up to what they've bestowed upon me."

Caudy has won numerous scholarships and fellowships while at the University and was selected in a national competi-



Caudy: In Glamour Magazine's Top 10



Magarik: To work on Gore campaign

tion last fall by Glamour magazine as one of the top 10 women undergraduates in the nation for academics and service.

She has served her fellow students as a computer consultant and a teaching assistant. She has been involved with science outreach programs at local elementary schools, built houses with Habitat for Humanity, mentored people in the pre-freshman summer research program, performed music at St. Louis Children's Hospital and nursing homes and has served in all leadership roles for the Ballroom Dancing Club.

In his nominating letter, Pikaard wrote: "She is a first-rate researcher and a mature, responsible lab member intellectually on par with my best graduate students and postdoctoral fellows. Amy's research project will lead to at least one first-authored publication in a good journal in the field of molecular genetics."

"She is also one of the nicest and most generous people any of us will ever meet, who has served the University community continuously, and in multiple capacities, for her entire four years in residence."

Magarik did an internship at the White House, and handled the logistics for President Bill Clinton's visits and motorcades

in St. Louis and Champaign-Urbana, Ill. She also accompanied the president to England and Russia. More recently, she oversaw the motorcade for the visit to St. Louis by Pope John Paul II and President Clinton.

Magarik is president of the Young Democrats and of the History Honors Society. She single-handedly resuscitated the history honorary on campus and organized an internship fair for history majors. She also has served as a Big Sister and a peer adviser in Arts and Sciences. She played viola in the University's symphony orchestra and coached tennis.

In Okenfuss' recommendation letter, he described Magarik as "an organized, able and efficient leader, not only on campus, but already in the world of government and public relations."

He added: "I know of few students with such breadth, academic depth and of such proven leadership abilities."

Opportunity

WU Women's Society grants scholarship

— from page 1

and integrity," Rapp said. "Sarah, if you approach your future tasks with the same determination and persistence as you have in the past, we know that you will enjoy much success."

The scholarship for community college transfer students was established by the society in 1976 and in 1995 was named the Elizabeth Gray Danforth Scholarship as an expression of gratitude and admiration for all Danforth had done as first lady of the University from 1973 to 1995. Danforth presented Wood with the scholarship certificate.

"I would like to thank the Women's Society for this wonderful opportunity," Wood said. "This is a dream come true for me."

She first learned of the scholarship while playing soccer for Meramec. During the game, the Washington University women's soccer coach, Doug Hippler, talked to Wood.

"It was during my first year at Meramec," she said. "He told me you can still come here and then told me about how only one person a year is awarded the scholarship. That was my goal ever since and I pretty much knew it was the only way I could go to school here."

Wood, who carried a 3.9 grade point average at Meramec, will study biology in the College of Arts and Sciences and is interested in going on to medical school. She also plans to play soccer and tennis for the Bears.

Her parents, Martha and Chip, were beaming with pride as their daughter accepted the scholarship.

"I am so happy for her," said Martha Wood. "If your kid has a dream, you want it to come true."

They also had the joy of telling their daughter she had been chosen when a phone call

inviting her to the meeting came before the notification letter arrived in the mail.

Some parent plotting led to a unique presentation at home.

"My dad came in holding flowers with a card that said I got it. It was very exciting," Sarah said.

The Women's Society plans to keep a watchful eye on Wood's achievements at the University, as they have with previous recipients.

"Providing scholarship resources for deserving students gives WSWU members a great deal of satisfaction," said Harriet K. Switzer, Ph.D., coordinator of the society and secretary of the Board of Trustees. "They love to see the talents of 'their' students thrive at the University, and they look forward to hearing about

their accomplishments in the many letters they receive from the graduates."

The 1995-96 recipient, Brian Saville, is excelling in his second year at the School of Medicine. He

prepared and taught a mini-course in cardiovascular physiology that was used to introduce first-year students to more advanced cardiac physiology and pharmacology in a clinical setting.

"Every day I have reason to be grateful for the excellent preparation I received at Washington University as an undergraduate," he wrote to the Women's Society in a recent update letter. "... The wonderful opportunities and experiences I have had flow directly from the generosity, dedication and vision of the Washington University's Women's Society. I am both proud and grateful to be a recipient."

The Women's Society is an organization of volunteers and professional women. In addition to the annual scholarship, the society offers services to the entire University community, including the Bear Necessities gift shop, The Furniture Exchange, friendship and hospitality for international students and funding for sponsored projects.

News Briefs



Campus quiz: High above campus this lion — one of a pair — stands vigil. Where is he?

the black-and-white photograph "The Arena — After the Fall" by Nanette Vinson, who won the journal's William Kohn Award for Undergraduate Artwork.

New journal debuts

The inaugural issue of the Washington University Journal of Science is available free to students, faculty and staff at Mallinckrodt Center. The journal, student-produced and loosely modeled after Science magazine, is one of only a handful of such publications in the country. It features original reports of science and engineering research performed by the University's undergraduate students; reviews of science topics and publications; and a news section. Juniors Michelle Williams, a biology major, and Alex Wong, a biochemistry and molecular biology major, are editors-in-chief. Faculty serve as advisers and on the editorial board.

Lifeguards needed

Calling all lifeguards — for the summer session at Millstone Pool in the Athletic Complex. The session lasts from May 17

through Aug. 20. Life Guard Training (LGT) and Cardiopulmonary Resuscitation (CPR) certification are required of all applicants. Work hours are flexible. For more information, contact Martha Tillman at 935-5296.

Stiff competition

The Washington University School of Medicine received 5,133 applications for admission to the 1998-99 first-year class. Of them, 120 were enrolled — a ratio of almost 43 applicants per position. Altogether there are 1,206 students currently at the school in M.D., M.D./Ph.D., M.A./M.D., health administration, occupational therapy, physical therapy and psychiatric epidemiology programs.

Answer: Our "king of the jungle" keeps watch over the University from the east facade of Brookings Hall.

"News Briefs" includes short items on a wide range of subjects, including information about resources, benefits and opportunities available to faculty and staff. Readers are invited to submit briefs, which will be used as space permits, to Betsy Rogers, Campus Box 1070, or by e-mail, betsy_rogers@aismail.wustl.edu.

Record

Washington University community news

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Medical School Update

Study offers new understanding of brain cell suicide after stroke

By LINDA SAGE

Findings from a newly published study at the School of Medicine could eventually open opportunities to prevent or diminish brain damage after head injury and stroke.

Scientists have long known that a brain chemical called glutamate can be deadly to neurons when it floods out of cells damaged by head injury and stroke. Excessive amounts of glutamate kill neurons by interacting with cell-surface proteins such as the NMDA receptor. The important role of this glutamate receptor in neuronal necrosis due to excessive calcium influx is well understood. But recent evidence has suggested that the NMDA receptor also might trigger cell suicide (programmed cell death, also called apoptosis), which is thought to enlarge damaged areas of the brain, lessening patients' chance of survival. Until now, however, there has been no information about how activation of

glutamate receptors might induce apoptosis.

In a study described in the April 8 issue of *Science*, School of Medicine researchers exposed brain cells

potassium movement through NMDA receptor channels to disease or normal physiology had not previously been studied.

Dennis W. Choi, M.D., Ph.D., the Andrew B. and Gretchen P. Jones Professor and head of neurology, directed the research team, and his long-time interests in the NMDA receptor and cell death initiated the current study.

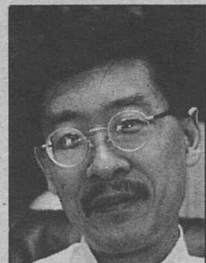
"These findings suggest that the participation of NMDA receptors in the pathogenesis of brain injury may be more multidimensional than previously suspected, and thus they increase the therapeutic rationale for developing drugs capable of blocking NMDA receptors," Choi said.

In the study, Yu made the first direct measurements of NMDA-evoked potassium currents from cortical neurons. The research team then looked at neurons cultured with glia, the brain's housekeeping cells. When extracellular levels of sodium and calcium mimicked those in the healthy brain, NMDA (a glutamate-like chemical) killed the neurons by necrosis. But when sodium and calcium levels were low, as after brain injury, adding NMDA triggered apoptosis during the next one to two days. A chemical that blocks the action of NMDA inhibited both the cellular depletion of potassium and apoptosis, as did raising the concentration of potassium in the medium.

According to Yu and other researchers, cellular potassium reduction might be a key step in activating apoptotic genes such as caspases. "This study provides evidence that the NMDA receptor may promote apoptosis by allowing potassium to escape from neurons," Yu said.

Next, the research team demonstrated that endogenous glutamate release also could cause neurons to lose potassium and undergo apoptosis if extracellular sodium and calcium levels were low. It appears, therefore, that glutamate released from brain cells can rob neighboring cells of potassium, facilitating their demise by programmed cell death.

"This work has opened a door for us to understand how and why glutamate triggers cell suicide after an ischemic insult," Yu said. "It eventually may provide a new opportunity to prevent or attenuate brain damage after harmful events such as stroke."



Choi: Directed research team



Yu: Finds new role for potassium

and tissue to conditions that mimic those after stroke. They observed a flow of potassium ions out of the neurons, and this flow ebbed when they inactivated the NMDA receptor. Moreover, neurons that lost potassium committed suicide during the following days.

"This work provides evidence that potassium efflux through glutamate receptor channels might be one of the mechanisms that mediate programmed cell death of neurons," said lead author Shan Ping Yu, M.D., Ph.D., research associate professor of neurology. "And it is the first study to identify a consequence of potassium efflux through NMDA receptors."

Whereas necrotic cells swell up and burst, suicidal cells shrink into oblivion. A shrinking cell must be losing ions and water, Yu deduced, focusing on potassium because of its high concentration in cells. Although potassium was known to flow through potassium channels and the channel controlled by the NMDA receptor, the contribution of



A stitch in time At a recent session of the mini-medical school, Jean Tishler, a teacher of anatomy and physiology at Ladue High School, practices suturing on artificial skin in an operating room lab. Students also learned about laparoscopic surgery in this session. The mini-medical school is an eight-week course being offered to the public by the School of Medicine. To get on the waiting list for future mini-medical schools, planned semiannually, call 362-9858.

Klahr elected to Royal College of Physicians

Saulo Klahr, M.D., the John E. and Adaline Simon Professor of Medicine, has been elected an honorary fellow of the Royal College of Physicians. He will be inducted into the college in London in June.

The Royal College, England's oldest medical institution, is recognizing Klahr for his scientific contributions to the study of kidney diseases. Klahr is a leading researcher in chronic renal disease.

Klahr directs Research and Scientific Affairs at Barnes-Jewish Hospital. His name also has appeared several times in directories of the best physicians nationwide. In addition, he is a fellow of the American College of Physicians and of the American Association for the Advancement of Science.

His studies focus on the regulation of chemical messengers and enzymes of the kidney. Using the tools of molecular biology, he investigates factors that stimulate kidney inflammation or deposition of fibrous tissue. Both changes are thought to be fundamental to progression of chronic kidney disease. He also studies factors important for normal kidney function.

Klahr's earliest work focused on normal kidney physiology and biochemistry and the impact of

kidney disease on patients. He also determined the relationship between malnutrition and clinical defects in renal function. His research during the 1970s led to unexpected insights into the mechanisms of kidney failure resulting from urinary tract obstruction, which damages the kidney by blocking urine flow. By the mid-1980s, Klahr and colleagues had defined how the kidney

His studies focus on the regulation of chemical messengers and enzymes of the kidney.

responds to obstruction of the ureters, the tubes that carry urine from the kidneys to the bladder. This work revealed that kidney cells become inflamed in response to urinary tract blockage, a more complex reaction than previously thought.

Klahr also has published critical papers on the metabolic abnormalities associated with uremia, a buildup of urea and other chemicals in the blood due to kidney failure. These abnormalities lead to defects in

glucose and protein metabolism in muscle.

In 1998, Klahr received the John P. Peters Award from the American Society of Nephrology, and he has garnered numerous other awards. He is a past president of the American Society of Nephrology, the National Kidney Foundation and the American Society of Renal Biochemistry and Metabolism. He also has served on advisory committees of the National Institutes of Health and the Food and Drug Administration.

Klahr has authored or co-authored more than 480 scientific articles, reviews in journals and chapters in medical books. He is editor of *Kidney International* and has served on the editorial board of 20 other scientific journals.

He received a medical degree in 1959 from the Universidad Nacional de Colombia in Bogota, Colombia. He came to the School of Medicine as a postdoctoral fellow in the Renal Division in 1961 and became an instructor of medicine two years later. Klahr directed the Renal Division from 1972 to 1991 and served as co-chair of the Department of Medicine and physician-in-chief at Jewish Hospital in St. Louis from 1991 to 1996.

Clowning

Laughter is medicine this couple provides

— from page 1

pool made out of a plastic foam cup. Soon many kids were smiling and wiggling their "tail feathers" to music, or yelling "Boo" to change a wooden rabbit in Dana's hands from black to white — and "Oob" to change it back again.

Even Wesley Williams, a 4-year-old with spina bifida, was won over. "I had to drag him over here," his mom, Shannon Brewer, said about her son, who was recovering from bladder surgery. "And now that he's here, he's smiled a couple of times," she said — and she smiled.

Adults often get into the spirit

of the Abendscheins' visits as much as children. And sometimes, the couple inspires others to volunteer their time. A former rodeo clown imprisoned at Shawnee Correctional Center in Vienna, Ill., started clowning again after the Abendscheins made several prison visits. The inmate recently told Dana about a family day appearance at the center. He told him: "Can you imagine, a convicted murderer making those kids laugh? It was so wonderful."

Clowning provides a nice outlet for the couple, too. Jane Abendschein assists the chairman of the Department of Surgery with research and patient responsibilities, while her husband studies how to reduce the damage that occurs when patients have surgery to lower the risk of heart attacks. He also

teaches first- and second-year medical students about the circulatory system and oversees the research training of cardiology fellows. Slipping into clown gear unleashes another side of their personalities.

"Belle can have an attitude," Jane said, grinning from ear to ear as Dana gave her a sidelong glance and called Belle a ding-a-ling.

"Yeah," she quipped back, "but Liberty's cracked (like the Liberty Bell)."

Dana Abendschein learned that he enjoyed making people laugh as a youngster test driving new magic tricks. During college, magic props were too much to haul around, so he turned to clowning instead. His wife joined the act after they married and moved to St. Louis. Their props now fill a van and a collapsible puppet theater on a trailer used

during parades.

They also run a local clown troupe, "Fools for Christ," and perform and instruct Christians about clowning at workshops throughout the Midwest. In mid-February, for example, they taught at the Show-Me Clowns for Jesus School at the Lake of the Ozarks, along with their 19-year-old son, Bryan, who also has the clowning bug.

Although the couple said their faith is critical for performing, they avoid being overtly religious. "[As clowns], we are loving and joyful — and hopefully people pick up on that," Dana said. "Our faces are painted, but what's coming out [to the audience] is what's inside."

Not that they take their clown appearances lightly. In fact, they try to rival the appearance of

circus clowns. The audience in the playroom at Children's Hospital suggested the Abendscheins pass the believability test with flying colors.

For visits with prison inmates, though, they might instead appear as sad-eyed beggar clowns in worn, mismatched clothing. Dana becomes Hapless and Jane portrays Forlorna. "That is an extremely hard character for me to do," she said. "You have to bring yourself down lower than anybody you're with at the time to enable people around you to feel better by boosting their spirits."

But the two agreed that these characters serve a purpose similar to the others. "You just feel people's empathy going out to you," Dana said, "and you know by the way they're reacting that you're lifting them up. That has a power that's hard to describe."

University Events

Terra Incognita • Patagonia • Baseball • Fashion Show

"University Events" lists a portion of the activities taking place at Washington University through May 8. For a full listing of medical rounds and conferences, see the School of Medicine's website at medschool.wustl.edu/events/. For an expanded Hilltop Campus calendar, go to www.wustl.edu/thisweek/thisweek.html.

Exhibitions

"Terra Incognita." Through July. Highlights early printed accounts of exploration and cultural encounters in the New World. Special Collections, level 5 Olin Library. 935-5495.



Lectures

Thursday, April 29

Noon. Genetics seminar. "Languages, Automata and Biological Sequences." David Searls, SmithKline Beecham Pharmaceuticals. Genetics Library, Room 823 McDonnell Medical Sciences Bldg. 362-7072.

4 p.m. Cancer Center Seminar Series. "Gorlin Syndrome: Hereditary Predisposition to Basal Cell Carcinoma." Sherri Bale, chief, genetics studies section, National Institute of Arthritis and Musculoskeletal and Skin Diseases. Third Floor Aud., St. Louis Children's Hosp. 747-0359.

4 p.m. Chemistry seminar. "Random-Diblock Copolymers: Synthesis and Characterization." Steve D. Smith, Procter & Gamble. Room 311 McMillen Lab (refreshments 3:40 p.m.). 935-6530.

5 p.m. Music Lecture Series. "Latest Findings on Dvořák's 'New World' Symphony." Michael Beckerman, prof. of musicology, U. of Calif.-Santa Barbara. Room 102 Music Classroom Bldg. 935-4841.



Friday, April 30

9:15 a.m. Pediatric Grand Rounds. "Transfusion Medicine." Lawrence T. Goodnough, prof. of medicine and pathology. Cioption Aud., 4950 Children's Place. 454-6006.

10 a.m. Chemistry symposium. 1999 St. Louis Awards Symposium. "Functional Mimics of Superoxide Dismutase." Dennis P. Riley, adjunct chemistry prof. Room 458 Louderman Hall. 935-4269.

11 a.m. Chemistry symposium. 1999 St. Louis Awards Symposium. "Therapeutic Applications of the Synzymes Based on Superoxide Dismutase Enzymes." Daniela Savemini, dir. of pharmacology, Metaphore Pharmaceuticals, St. Louis. Room 458 Louderman Hall. 935-4269.

Noon. Cell biology and physiology seminar. "Insulin Action and Inaction." Richard A. Roth, prof. of pharmacology, Stanford U. School of Medicine. Room 426 McDonnell Medical Sciences Bldg. 362-6950.

1 p.m. Center for Mental Health Services Research Brown Bag Seminar Series. "Assessment of Mental Health Services." Sarah M. Horwitz, assoc. prof. of

epidemiology and public health, Yale U. Room G38 Goldfarb Hall. 935-5687.

1 p.m. Chemistry symposium. 1999 St. Louis Awards Symposium. "Copper, Superoxide Dismutase, and ALS." Joan Selverstone Valentine, prof., U. of Calif., Los Angeles. Room 458 Louderman Hall. 935-4269.

1:55 p.m. Chemistry symposium. 1999 St. Louis Awards Symposium. "How Did Superoxide Dismutase Get Its Copper? Coordination Chemistry of the Intracellular Milieu." Thomas V. O'Halloran, prof., Northwestern U., Evanston, Ill. Room 458 Louderman Hall. 935-4269.

3:10 p.m. Chemistry symposium. 1999 St. Louis Awards Symposium. "Metalloporphyrin Probes of the Chemistry and Biology of Peroxynitrite." John T. Groves, prof., Princeton U. Room 458 Louderman Hall. 935-4269.

4:05 p.m. Chemistry symposium. 1999 St. Louis Awards Symposium. "Seeing Is Believing: Visualizing in Vivo Gene Expression by MR Imaging." Thomas J. Meade, prof., Calif. Institute of Technology, Pasadena. Room 458 Louderman Hall. 935-4269.

Monday, May 3

Noon-1 p.m. Molecular biology and pharmacology seminar. "The Biochemistry of Notch Signaling: A Developmental Switch Connects to Alzheimer's Disease." Raphael Kopan, asst. prof. of dermatology, The Philip Needleman Library, Room 3907 South Bldg. 362-2725.

4 p.m. Biology seminar. "Interactions Between Ambient Light, Bird Color, Display Behavior and Microhabitat Choice." John Endler, prof., U. of Calif.-Santa Barbara. Room 162 McDonnell Hall (Hilltop Campus). 935-6860.



4 p.m. Immunology Research Seminar Series. "Gene Regulation in the Immune Response." Anjana Rao, pathology dept., Harvard Medical School. Eric P. Newman Education Center. 362-2763.

Tuesday, May 4

Noon. Molecular Microbiology and Microbial Pathogenesis Seminar Series. "Evolution of Virulence in *Vibrio Cholerae*." Matt Waldor, prof. of microbiology, Tufts U. and New England Medical Center, Boston. Cori Aud., 4565 McKinley Ave. 362-7059.

12:10-12:55 p.m. Physical therapy research seminar. "Screening for Diabetic Foot Complications: Are We Closing the Barn Door After the Horse Is Gone?" David Sinacore, asst. prof. of physical therapy. Lower level, Classroom C, 4444 Forest Park Blvd. 286-1400.

Wednesday, May 5

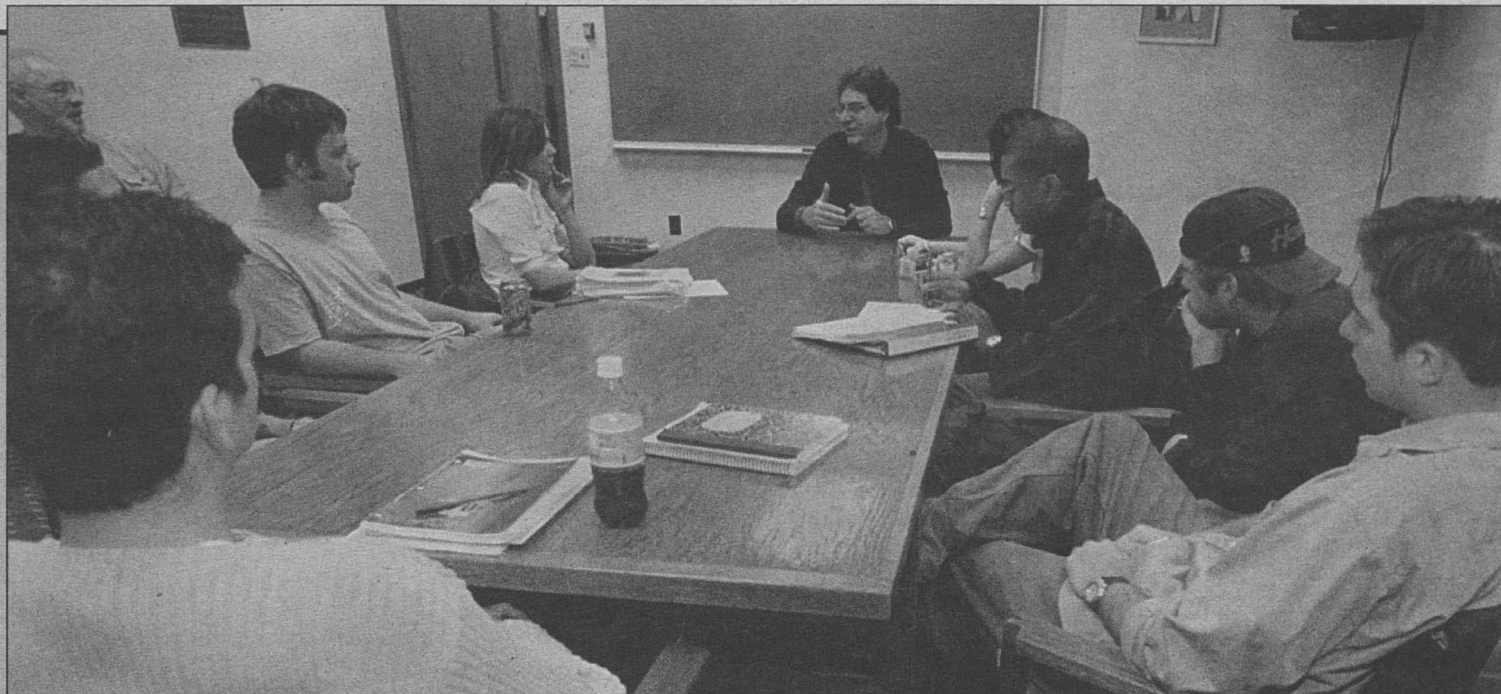
4 p.m. Biochemistry and molecular biophysics seminar. "Structural Biology at the Membrane Interface: Prostaglandin H Synthase and Mammalian Hexokinases." Michael Garavito, assoc. prof. of biochemistry, Mich. State U., East Lansing. Cori Aud., 4565 McKinley Ave. 362-0261.

6:30 p.m. School of Architecture Forum for Contemporary Art lecture. Will Bruder, architect, Will P. Bruder Architect Ltd., New River, Ariz., will lecture on his recent work. Steinberg Hall Aud. (reception 6 p.m., Givens Hall). 935-6200.

Thursday, May 6

Noon. Genetics seminar. "Vascular Morphogenesis: A Human Genetics Approach." Douglas Marchuk, genetics dept., Duke U. Med. Center. Genetics Library, Room 823

Analyzing work Actor, writer, producer and director Harold Ramis (center, rear) discusses the ins and outs of film directing with students in the Performing Arts Department April 15. Ramis, a University Trustee, was in town to present a free screening of his latest film, "Analyze This," starring Robert De Niro and Billy Crystal, for students at the Tivoli Theatre.



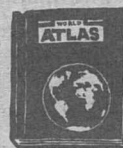
MARY BURTON

McDonnell Medical Sciences Bldg. 362-7072.

4 p.m. Anatomy and neurobiology lecture. The 43rd Annual Robert J. Terry Lecture. "Stress, Neurodegeneration and Strategies for Saving the Endangered Neuron." Robert Sapolsky, prof. of biological sciences, Stanford U. Moore Aud., 4580 Scott Ave. 362-7043.

Friday, May 7

6 and 8:30 p.m. Travel Lecture Series. "Where is Patagonia?" Ken Armstrong, television documentary producer. Cost: \$4.50. Graham Chapel. 935-5212.



Music

Friday, April 30

8 p.m. WU Opera performance. "A Spring Evening of Opera." Scenes from "La Traviata" and "The Love for Three Oranges." Jolly Stewart, dir. (Also May 1, same time). Umrath Hall Lounge. 935-4841.

Performances

Friday, April 30

8 p.m. OVATIONS! Series performance. "JAZZDANCE." Danny Buraczski, dancer and choreographer. (Also May 1, same time, and May 2, 2 p.m.) Cost: \$23; call for discounts. Edison Theatre. 935-6543.

Sports

Tuesday, May 4

3 p.m. Men's baseball team vs. Fontbonne College. Kelly Field. 935-5220.

Friday, May 7

3 p.m. Men's and women's outdoor track and field. WU Last Chance Meet. Kelly Field. 935-5220.

...And more

Saturday, May 1

9 a.m. STD/HIV class lecture and practicum. "STD Update." (Also May 8 and 15, same time). Cost: \$65. U. of Mo.-St. Louis, 8001 Natural Bridge. To register, call 747-1522.

Sunday, May 2

7:30 p.m. School of Art's Fashion Show. 70th Annual Fashion Show. Cost: \$45 general seating. Garden Court, Saint Louis Galleria. For information, call 935-9090.

Wednesday, May 5

Noon-1 p.m. Women in neuroscience workshop. "Alternative Careers." Cori Aud., 4565 McKinley Ave. (refreshments). 362-2561.

Saturday, May 8

8 a.m. Office of Continuing Medical Education 11th Annual Physician's Conference. "Osteoporosis." Eric P. Newman Education Center. For costs and registration, call 362-6891.

Sports Section

Men's tennis finishes second

The men's tennis team finished second to Emory University last weekend at the 1999 University Athletic Association (UAA) Championships in Cleveland. The Bears defeated New York University (4-0) and Brandeis University (5-2) to advance to the conference championship match versus Emory. The doubles tandem of Eduardo Nieuwenhuyzen and Mike Feldman won 8-6 at number-one doubles, but the Bears lost all six singles matches and the other two doubles pairings in dropping a 7-0 decision to the nationally ranked Eagles. The Bears are likely out of a team bid to the NCAA Division III Championships, but junior Arun Nanjappa is a strong candidate for the individual tournament with an 18-3 record (12-3 at number-one singles).

Women's tennis also loses to Emory

The women's tennis team also finished second in the UAA for the ninth time in 12 years at the championships last weekend in Cleveland. The Bears, who fell to Emory 8-1 in the title match, defeated Brandeis, 7-1, in the first round before dispatching the University of Rochester, 6-3, in the semifinals. WU wraps up the season with an 18-4 record, breaking the school mark for wins in a season. Senior Priya Vajani and sophomore Nandini Chaturvedula teamed up to go 2-1 at No. 1 doubles, including the Bears' lone point against Emory, to earn first-team all-UAA honors. Though the Bears did not qualify as a team for next month's NCAA Championships, three players qualified to compete as individuals. Freshman Kate Abrams will

compete in singles and Chaturvedula and Vajani in doubles.

Men first, women second in UAA

The men's track and field team captured its seventh conference championship and completed its sixth indoor-outdoor sweep, and the women's team took second at the 1999 UAA Outdoor Track and Field Championships in Rochester, N.Y. The men, who won the UAA indoor championships in March, scored 180 points, bettering second-place Rochester by 46 points. Senior David Cerven and junior Tim Julien led the way with two wins apiece. Cerven won the long jump with a distance of 21 feet, 11 inches and made a provisional qualification for next month's NCAA Championships with a leap of 46 feet, 7 1/2 inches

in the triple jump. Julien, who earned men's most outstanding performer honors, won the 5,000 meters in a time of 15 minutes and qualified for the NCAA Championships with a time of 31 minutes, 17.25 seconds in winning the 10,000 meters. Other winners were Jemal Swoboda in the pole vault (14 feet, 11 inches), Jonte Greer in the 100 meters (10.97 seconds) and Richard Greene in the 110-meter hurdles (15.10). The women's team, which finished second behind Brandeis, had four individual winners. Julie Riley won the pole vault after clearing a school-record 10 feet, 9.5 inches; Rachel Brown captured the shot put with a toss of 38 feet, 2-1/4 inches; Emily Richard won the 10,000 meters in an NCAA-qualifying time of 38:00.28; and Susan Chou captured the 5,000 meters and qualified for the NCAA Championships after running a 17:45.02.

Richard, who qualified for the NCAA Championships in the 3,000 meters earlier this season, also qualified in the 5,000 meters after finishing second to Chou with a time of 17:47.96.

Baseball loses 7-3 to McKendree College

The baseball team, playing for the first time in 12 days, lost 7-3 to McKendree College at home Sunday, April 25. Sophomore designated hitter Kevin Lux blasted a three-run homer—his team-leading seventh of the season—in the bottom of the eighth inning to close the gap to 5-3, but the Bearcats posted two more runs in the ninth to seal the victory. With three games remaining in the season, the Bears are still in the hunt for the school record for victories in a season.

Law clinic

Students learn law, make a difference

— from page 1

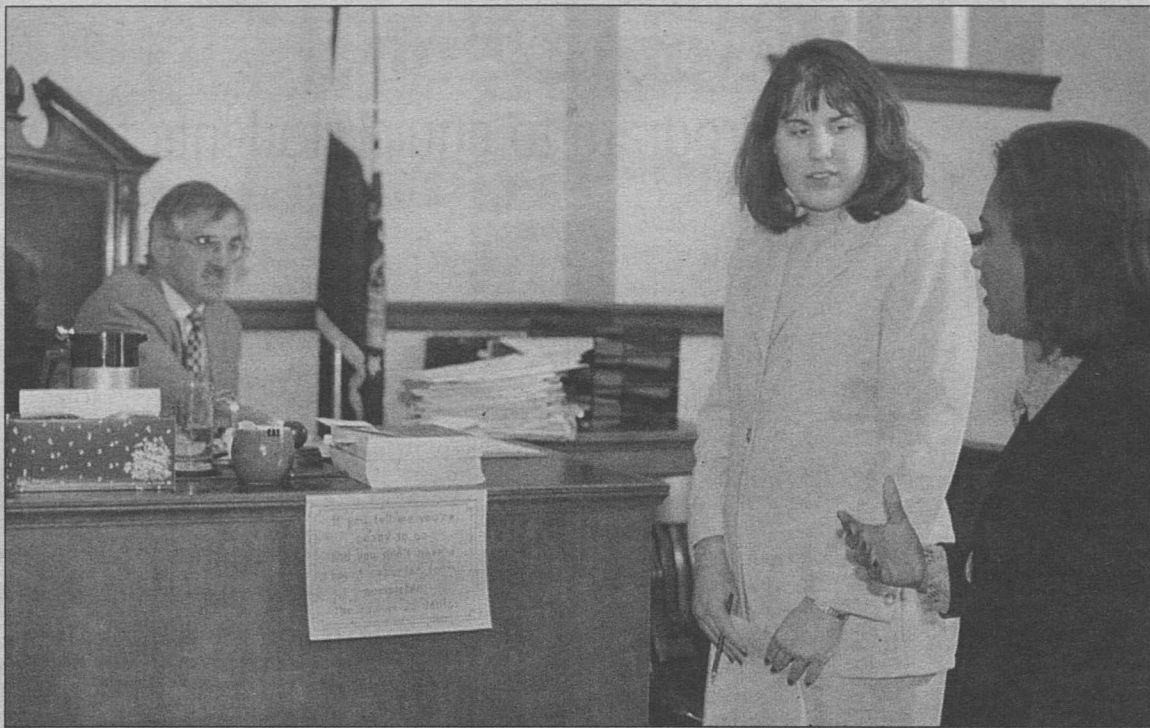
glaring need for someone to serve the best interests of the children, but also offer a tremendous educational opportunity.

"The guardian ad litem cases are a rich learning experience for the law students, who have 15 days to prepare a roughly 20-page report for the court making a recommendation on the custody of a child," Aiken noted. "A full range of lawyering is done in that time. The students not only interview everyone who has access to the child, obtain necessary records and reach legal conclusions, but they also are subject to examination in court on their report."

Observed second-year law student Clay St. Clair: "The clinic lets you see a case from start to finish. We did everything from obtaining arrest records, child abuse reports and school and employment records to interviewing witnesses, visiting the home environments and seeing the trial all the way through."

The clinic can mean exposure to the darker side of family law — mediating tense family situations, assisting women who have been totally dependent upon their abusers and witnessing appalling living conditions firsthand. But the law students say this emphasizes both the value of such real-world legal experience and the vital role the clinic plays in resolving cases that might otherwise fall through the cracks.

"In many cases, the victims do not have the income to afford an attorney, and the system has basically failed them," second-year



Second-year law student Chetema Lucas, right, and third-year law student Mary Lifson present a guardian ad litem report to St. Louis City Family Court Judge Thomas Frawley as part of the School of Law's Civil Justice Clinic.

law student Lisa Hibbard Boero said. "In one situation where the mother had an order of protection, the husband essentially tried to starve her out. We were able to spend far more time than an attorney would have had to gather the necessary documents and interview the witnesses to make her case. We not only obtained for her an extended order of protection, but also a court order for him to pay the mortgage and child support."

The combination of cases involving children and adult abuse victims also gives students direct lessons in professional ethics. When they represent an adult abuse victim, for example, information regarding the care of the children is protected under attorney-client privilege.

However, when the students are acting as guardians ad litem, any information they discover regarding abuse must be reported

"In many cases, the victims do not have the income to afford an attorney, and the system has basically failed them."

LISA HIBBARD BOERO

to the Division of Family Services, Aiken noted.

The law faculty recently voted to move the clinic from the Legal Services of Eastern Missouri

office in St. Louis' Central West End to the law school, beginning next fall. Aiken said the in-house clinic will foster a strong public interest presence in the law school, provide increased opportunities for interdisciplinary partnerships and allow a broader caseload due to better scheduling.

Clearly the students find the clinic experience invaluable. "This clinic ought to be a required course for all law students," said third-year law student Shari Saslaw. "You really get exposed to how the legal system works and how it sometimes fails people. But when you are able to help a victim of abuse or intervene on behalf of a child, you also learn that the law is a tremendously powerful tool."

Clinics offer range of legal experience

As the School of Law marks the 25th anniversary of its Clinical Education Program this academic year, the program remains committed to honing students' professional skills and providing legal services to underrepresented communities. Through legal internships, students directly apply their coursework to real cases and gain a clearer understanding of the roles and responsibilities of today's lawyers.

Karen L. Tokarz, J.D., LL.M., professor of law and director of Clinical Education, said the clinics serve a vital role in the professional development of law students.

"You can read about the law in a textbook. You can analyze judicial rulings and discuss the public policy behind the law," Tokarz said. "But until you see how the law really works in the day-to-day world, until you put the principles to work, you can't fully appreciate the impact that you as a lawyer have on people's lives."

In addition to the Civil Justice Clinic, the law school offers Criminal Justice and Capital Defense clinics, an Employment Law Clinic, a Washington, D.C.-based Congressional Clinic and a Judicial Clerkship clinic.

Next spring, the law school will launch a new Interdisciplinary Environmental Law Clinic, in which students will work on environmental matters with interdisciplinary teams of professionals. Students will draft legislation, conduct research to support environmental litigation and comment on proposed environmental regulations, policies and impact statements.

Curtiss receives patent on promising new vaccine technology

By TONY FITZPATRICK

After waiting for nearly 18 years, Roy Curtiss III, Ph.D., the George William and Irene Koechig Freiberg Professor of biology, was granted a United States patent for his genetically engineered bacterial antigen delivery system this spring.

The technology is being used to develop recombinant vaccines to prevent or therapeutically treat infections due to *Helicobacter pylori*, which causes ulcers; *Campylobacter jejuni*, which causes diarrhea in poultry and humans; *Mycobacterium tuberculosis*; hepatitis B virus; and a number of other pathogens for agricultural animals.

The patent, "Recombinant

Avirulent Bacterial Antigen Delivery System," number 5,888,799, was originally filed Oct. 22, 1981.

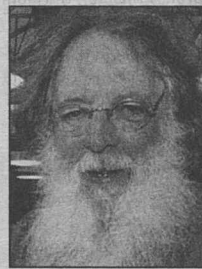
Washington University and the University of Alabama, Birmingham (UAB) will share patent income equally from any vaccine marketed to combat bacterial, viral, fungal or parasitic disease using Curtiss' concept. Curtiss has worked to develop the system both here since 1983 and, before that, at UAB.

The patent covers composition, manufacture and use of live attenuated — or weakened — derivatives of disease-causing bacteria genetically engineered to express foreign antigens, or proteins, in a vaccine. The vaccine homes in on lymph tissue in an

individual to induce immune responses against the foreign antigens.

Curtiss conceived the initial ideas for the patent in the late 1970s and early 1980s when he was using gene cloning to express protein antigens from streptococcal bacteria in *E. coli*. One purpose of these studies was to develop a recombinant vaccine that would induce anti-streptococcal immunity in an individual after taking an oral vaccine.

In 1981, when Curtiss filed the patent application, introducing genes from one pathogen into another was not possible because such gene cloning was prohibited by the National Institutes of Health (NIH) Guidelines for Recombinant DNA Research. Curtiss had helped



Curtiss: Patience pays off in patent

draft the guidelines in the 1970s as an original member of the NIH Recombinant DNA Advisory Committee. Although international patents on this technology first were granted in 1989, the U.S. Patent and Trademark Office had ruled in 1984 that the invention was not far enough advanced to be patentable in this country.

However, in 1984, when it became possible to introduce genes from one pathogen into attenuated strains of another

pathogen, Curtiss began to introduce streptococcal genes into attenuated types of *Salmonella typhimurium*. He then filed what is called a Continuation-In-Part application in 1985, which ultimately served as the basis for the patent issued this year.

The patent has been licensed to MEGAN Health Inc., a biotechnology company in St. Louis that is commercializing much of the technology arising from research in Curtiss' laboratory over the past 20 years. Curtiss has a financial interest in MEGAN Health.

Two vaccines using Curtiss approaches have been approved by the U.S. Department of Agriculture and are being marketed for use in preventing *Salmonella* infections in poultry and swine.

Career Center task force makes recommendations to strengthen services

By DAVID MOESSNER

iming high and looking toward the future have long been attributes possessed by Washington University students. Now the University, armed with the recommendations of the Task Force on Career Services, is working to help students further sharpen that gaze.

James E. McLeod, vice chancellor for students and dean of the College of Arts and Sciences, appointed the task force in March 1998 and charged it with taking a fresh and forward look at career services for liberal arts students.

The task force, chaired by Robert L. Virgil, Ph.D., professor emeritus of business and the former dean of the John M. Olin School of Business, concluded that the University "must give significantly greater attention, commitment and investment to career services" in the future.

To that end, the task force made a number of recommendations:

(1) All hands should join in the goal of University students to have career planning and placement services second to none.

(2) A very proactive, comprehensive marketing plan for career services aimed at employers (as well as students, parents, faculty, advisers, department heads and alumni) should be developed.

(3) The essential, core services — some of which are provided in some form now — should include at least the following: career advising, internships and experiential learning, model learning portfolio, alumni participation, dialogue with employers, joint college-Career Center workshops, job-search workshops, graduate school advising, and employer relations and partnerships.

(4) There must be a substantial increase in the attention, support and development given to internships, externships and other

forms of applied experiential learning as a primary means of career preparation for students.

(5) The Career Center should become one of the most important links between the University and its alumni. Alumni across all divisions of the University should be energized as volunteers to form active networks that will assist in providing career services for undergraduate students.

(6) A comprehensive marketing plan directed at students, their expectations and their responsibilities over their four years here should be put in place. It must reinforce continually for students (and their parents) that there is no better investment they can make in their career than a University education. Serious consideration should be given to a course on career preparation as an integral part of this marketing plan.

(7) Career advising should be overlaid on academic advising. Academic advisers and depart-

ments will require substantial support in order to perform this critical role; there will need to be close collaboration between departments and the Career Center.

(8) The Career Center should establish a proactive program of taking the University to employers and of cultivating relations with employers that lead to opportunities for students; as part of this program, a subset of employers should be targeted for special, mutually beneficial partnerships.

(9) There should be a commitment to provide the information technology and resources necessary for students to have first-rate career services.

(10) Parents of students should be consistently informed, educated, involved and drawn into career services for their sons and daughters.

(11) A point person in the Career Center should have

responsibility as the liaison with academic departments and student organizations in bringing business, government, not-for-profit and other professionals onto campus to meet with students, faculty and the academic leadership inside and outside the classroom.

(12) In due course, the Career Center should have an external advisory board.

McLeod praised Virgil and his committee of alumni, parents, faculty and students. "Bob Virgil and his outstanding committee did a tremendous job of focusing light on an area that has become more important to our students and more a part of their development over the past decade.

"We've already started what promises to be an ongoing process," McLeod continued. "These recommendations reinforce that it's not just about a student's 'career' — it's about his or her education."



Celebrating Earth Day Brian Cole (left) and Chad Folis prepare to plant a Redmond linden tree on the north side of Simon Hall Friday, April 23, in observance of Earth Day 1999. The linden was one of several planted to replace trees lost because of construction.

Employee meetings to review health care costs and changes

The University's annual open enrollment for employee health benefits is scheduled from May 1 through June 1. During this time employees can consider their health care needs and decide the type of coverage they wish to have starting July 1.

To provide faculty and staff with opportunities to discuss and perhaps change their health care providers, the University is holding a series of meetings in May on the Hilltop, Medical and West campuses.

The schedule of those meetings is as follows:

Hilltop Campus

From 9 to 11 a.m. and from 2 to 4 p.m.:

- May 3 — Brown Hall Lounge
- May 4 — Lopata Hall, Room 101
- May 5 — Simon Hall, Room 112
- May 7 — Steinberg Hall Auditorium
- May 10 — Crow Hall, Room 201
- May 11 — Crow Hall, Room 201
- May 12 — Anheuser-Busch Hall, Room 204

West Campus

From 9 to 11 a.m. and from 2 to 4 p.m.:

- May 6 — Library Conference Room A/B

- May 13 — Library Conference Room A/B

Insurance Carrier Meetings

Representatives from all of the insurance carriers will be available to meet with employees on the Hilltop Campus in Holmes Lounge on:

- May 18 — 8:30 a.m. to 5 p.m.
- May 20 — 8:30 a.m. to 5 p.m.

Medical Campus

(includes carrier meetings)

Meetings for the medical school are in Cori Auditorium in the McDonnell Medical Sciences Building, and representatives from all of the insurance carriers will be available to meet with employees at the meetings:

- May 3 — 12:30-2 p.m.
- May 4 — 8:30-10 a.m.
- May 5 — 8:30-10 a.m.
- May 6 — 11 a.m.-1:30 p.m.
- May 7 — 9:30-11 a.m.

Packets were mailed to all employees' homes this week, including information about the health-care benefits changes occurring July 1. For more information, call the benefits resource line at 935-8500 or go to the website at <http://www.wustl.edu>.

Employment

Use the World Wide Web to obtain complete job descriptions. Go to cf6000.wustl.edu/hr/home (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.

Scholarship Coordinator 990220
Residential College Director (two positions) 990221-222

Administrative Assistant 990226
Administrative Assistant, Grants 990227

Associate Director, Computing Center Operations 990228
Counselor/Financial Analyst 990230

Mechanic (Bargaining Unit Employee) 990231

Manager 990233

Assistant Accountant 990235

Loan Coordinator 990240

Accounts Payable EDI Support Technician 990241

Researcher 990242

Administrative Assistant 990243

Gift Accountant 990244

Technical Secretary 990245

Payroll Services Representative 990249

Administrative Aide 990254

Systems Administrator 990255

Associate Director, Purchasing Services 990256

Senior Contract Management Liaison (three positions) 990257-259

Contract Management Liaison (three positions) 990260-262

Purchasing Coordinator (four positions) 990264-267

Administrative Assistant I 990268

Department Secretary 990269

Accounts Payable Service Representative Trainee 990274

Research Technician 990275

Director of Special Events 990276

Research Assistant 990277

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 resumes to the Office of Human Resources, 4480 Clayton Ave., Campus Box 8002, St. Louis, Mo. 63110, or call 362-7196.

Administrative Secretary 990831

Insurance Billing and Collection II 990951

Grant Assistant II 991093

Surgical Assistant - Animal 991157

Grants/Budget Specialist 991242

Coder II 991294

Senior Programmer Analyst 991306

Going global

Program to equip students for world leadership

By DAVID MOESSNER

The leaders of tomorrow just got a jump-start from a pair of today's vanguards.

The facilitating union: The Mercantile Leadership Program at Washington University, a new and unique opportunity for students who aspire to be internationally minded leaders of their generation.

Funded by a \$500,000 grant from Mercantile Bancorporation Inc., the one-year program is slated to begin this fall. The program is to be overseen by the University's Office of International Studies in Arts and Sciences under the leadership of Director Priscilla M. Stone, Ph.D., and will bring 45 first-year students into close relationship with each other, with faculty mentors and recognized leaders from both the private and public sectors for an intensive study of international affairs.

"By introducing these students to a sophisticated knowledge of world affairs and developing their communication skills, we hope to help create the potential leaders of business, government and public service," Stone said.

By the end of the program, students will have been exposed to a broad spectrum of future careers through interaction with guest speakers, internships and coursework, Stone added. The students may then go on to choose a major in any field.

"By introducing these students to a sophisticated knowledge of world affairs and developing their communication skills, we hope to help create the potential leaders of business, government and public service."

PRISCILLA M. STONE

focused students."

Among the projected highlights of the program, which is designed to emphasize the breadth of an international perspective:

- Newly designed, interdisciplinary courses focusing on key issues that are shaping the global system;
- A speakers' series featuring leaders from the international business community, the United Nations, the U.S. State Department, the World Bank and similar organizations, along with representatives of foreign governments;
- An internship program to introduce students to the practical aspects of international affairs;
- Internships and speakers drawn from the extensive network of foreign diplomats and leaders in

international conflict management from the Center for International Understanding in St. Louis; and

• Interaction among students in the program and key faculty mentors, intended to create a focused learning community around shared interests in the new global society.

"We know that our students are coming to Washington University deeply interested in world affairs and eager to acquire the skills to thrive in an international context after graduation," said James E. McLeod, vice chancellor for students and dean of the College of Arts and Sciences. "This program, now being shaped by a faculty steering committee, will be a very important part of that educational process."

Stone said that the University intends to admit the first group of students this fall and is currently developing the courses and outlines of the speakers' series and internship program.

"We are very excited to add this program to our offerings in International Studies and know there will be a great deal of student interest," Stone said. "Young people come to the University to gain a perspective on world affairs, but also are looking for advice about what skills are needed to thrive in an international context. The Mercantile Leadership Program will meet those needs."

Skeleton

Find challenges common view of human ancestry

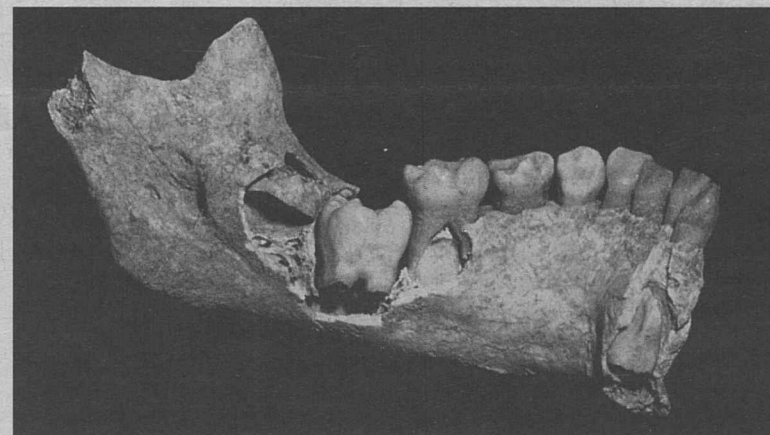
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early modern humans from elsewhere in Europe. Scientists have debated the extent to which Neandertals practiced cultural rites, including ritual burial, or whether such rituals originated with early modern humans, who are thought to have had more elaborate technological and sociocultural systems.

Members of the Portuguese Institute of Archaeology originally discovered the Lagar Velho child's left-hand and forearm bones in November in the Lapedo Valley. An extensive amount of earth had been removed from the site several years earlier, exposing Upper Paleolithic deposits. An archaeological team led by Zilhão then began removing what turned out to be a nearly complete skeleton.

In January, Trinkaus flew to Portugal to begin conducting the paleontological analysis of the bones. The skeleton is now at the Portuguese National Archaeological Museum in Lisbon, where an international team of specialists, including Trinkaus, will be analyzing it in the years to come.

"This find refutes strict replacement models of modern



The degree of development of the teeth in this lower jaw of the 24,500-year-old Portuguese skeleton indicates that the child was about 4 years old at the time of death. The presence of a chin aligns the skeleton with early modern humans.

human origins — that early modern humans evolved in Africa about 100,000 years ago and then spread and wiped out the Neandertals without interbreeding," Trinkaus said. "While the replacement adherents argue that Neandertals became extinct about 30,000 years ago, and, therefore, were not ancestors of modern humans, the Lagar Velho find would indicate a transition period in which both populations interbred, leading to the descent of modern humans."

Trinkaus said that in Spain and Portugal the spread of early modern humans was very late, compared to the transition elsewhere in Europe. "While the

fossil record is scant, previous finds have indicated Neandertals endured in the cul-de-sac of Iberia 5,000 to 10,000 years after they had been replaced or absorbed elsewhere in Europe," he said.

Using DNA evidence, some scientists have argued that Neandertals and early modern humans were different species, and, thus, that modern humans did not descend from Neandertals. While the first evidence of archaic human ancestors dates back more than 4 million years, the genus *Homo* evolved 2.5 million years ago. *Homo erectus*, who used advanced tools and fire, appeared about 2 million years ago and evolved into Neandertals (beginning about 200,000 years ago) and other late archaic human groups in different geographical regions. Early modern humans evolved from one or more groups of these late archaic humans.

Commonly associated with a protruding brow and stocky build, Neandertals often are characterized as a less sophisticated and less intelligent species than the more graceful and intelligent early modern humans.

"The Lagar Velho child demonstrates that through interbreeding, Neandertals could have contributed to the ancestral line of modern humans," Trinkaus said. "Yes, we are unique and special, but we are not all that different from our ancestors."

Campus Watch

The following incidents were reported to University Police from April 19-25. Readers with information that could assist in investigating these incidents are urged to call 935-5555. This release is provided as a public service to promote safety awareness and is available on the University Police Website at rescomp.wustl.edu/~wupd.

April 19

1:16 p.m. — A student reported that someone stole two credit cards and cash from a desk in an unlocked room at Beaumont Residence Hall. More than \$1,100 in purchases had been made with one of the cards.

April 25

10:56 p.m. — A student reported

that the WUTV station in Prince Hall received several threatening telephone calls. An investigation is continuing.

University Police also responded to 10 additional theft reports, four vandalism reports, one additional report of telephone harassment, one additional burglary, an unauthorized party, an auto accident and a disturbance.

Notables

Of note

Graduate Arts and Sciences Dean Robert E. Thach, Ph.D., honored 15 graduate students in Arts and Sciences April 16 with the Dean's Award for Teaching Excellence, recognizing their "superb performance" in instructing undergraduates. They are **Christiane L. Auston**, women's studies; **Angela K. Bolte**, philosophy; **Gavin W. Chan**, earth and planetary sciences; **Mark A. Cyr**,

history; **David C. Earhart**, Asian and Near Eastern languages and literatures; **Joseph S. Farthing**, chemistry; **Gavin M. Foster**, comparative literature; **Bradley P. Fratello**, art history and archaeology; **Daniel C. Giedeman**, economics; **Angela P. Gordon**, anthropology; **Ann A. Huse**, English; **Kathleen M. Llewellyn**, Romance languages; **Dylan Q. Retsek**, mathematics; **David W. Weisrock**, biology; and **Fred R. Yaniga**, German.

Amir A. Amini, Ph.D.,

assistant professor of medicine and of biomedical engineering, recently was selected to serve on the editorial board of IEEE Transactions on Medical Imaging, a leading journal on medical imaging, published by the Institute of Electrical and Electronics Engineers. ...

Third-year law students **Brian Klein** and **Douglas Warren** were named Best Oralists at the Giles Rich Intellectual Property regional moot court competition held recently in Chicago. ...

Graduate architecture students in a historic preservation and urban design course, taught by lecturers **Esley Hamilton** and **Carolyn Toft**, participated in a day-long meeting on revitalization of a three-block stretch of Olive Street in St. Louis' Central West End. The brainstorming session, organized by Landmarks Association, of which Toft is the executive director, and the St. Louis Post-Dispatch, focused on the street's historic buildings, opportunities for new construction, traffic circulation, potential uses and ways to connect with nearby neighborhoods.

Speaking of

Arnold J. Heidenheimer, Ph.D., professor of political science in Arts and Sciences, recently presented a paper titled "The Relocation of German National Icons and Routes to Inclusion and Citizenship" at a conference on contemporary German politics sponsored by the Political Science

Institute of Humboldt University in Berlin. He also discussed political corruption in Japan at the annual meeting of the American Association of Asian Studies in Boston. Most recently, Heidenheimer presented a paper titled "Political Parties and Political Corruption: A Comparative Analysis in Historical Perspective" at a conference at the Schuman Center of the European University Institute in Fiesole, Italy. ...

Ahmet T. Karamustafa, Ph.D., associate professor of Islamic thought and director of the Religious Studies Program in Arts and Sciences, delivered the Mircae Eliade Lectures in Comparative Religion at Western Michigan University in Kalamazoo last month. The three lectures, collectively titled "Defining Religion: Classical, Medieval and Contemporary Islamic Perspectives" were on "Religion as a Private Matter," "Religion as Perfection" and "Religion as Freedom." ...

R. Keith Sawyer, Ph.D., assistant professor of education in Arts and Sciences, presented papers at two conferences this month. At the Society for Research in Child Development biennial meeting in Albuquerque, N.M., Sawyer presented the paper "How Do Groups Contribute to Development? Collaborative Emergence and Levels of Analysis in Developmental Research." At the American Educational Research Association annual meeting in Montreal, Sawyer presented "Script-think, Classroom Discourse and Curriculum Design." ...

Glenn D. Stone, Ph.D., associate professor of anthropology in Arts and Sciences, recently was invited to give talks at Arizona State University in Tempe and the University of Arizona in Tucson. Both talks dealt with politics and population in Africa. ...

Murray L. Weidenbaum, Ph.D., chair of the Center for the Study of American Business and the Edward Mallinckrodt Distinguished University Professor of business, gave the inaugural Firstar Bank Lecture at Miami University in Oxford, Ohio. His presentation was titled "American Business and the Changing Global Marketplace."

On assignment

Nicholas O. Davidson, M.D., instructor in medicine, has been selected to serve as a member of a study section for the Center for Scientific Review. His four-year term begins July 1. Members are selected on the basis of their demonstrated competence and achievement in their scientific discipline as evidenced by the quality of research accomplishments, publications in scientific journals and other significant scientific activities, achievements and honors. Study sections review grant applications submitted to the National Institutes of Health (NIH), make recommendations on these applications to the appropriate NIH national advisory council or board and survey the status of research in their fields of science.

Biology students win Spector Prize

Phoebe Lin and Dion Dickman, both graduating seniors in biology, have been named recipients of the Marian Smith Spector Prize in Biology for 1999. The students will be honored at a May 14 reception along with other honors students. Lin and Dickman, whose work was judged best among more than 25 honors biology graduates, presented research talks on their work at a special biology department seminar Monday, April 26.

The Spector Prize, which began in 1974, is an annual award for academic excellence and outstanding undergraduate achievement. It was established in memory of Marian Spector, a 1938 graduate of the University. Spector studied zoology here under Viktor Hamburger, Ph.D., now the Edward Mallinckrodt Distinguished Professor Emeritus of biology in Arts and Sciences. She participated in Hamburger's highly acclaimed research in embryology.

Lin performed her studies in the laboratory of Gregory D. Longmore, M.D., assistant professor of medicine in the School of Medicine. She studied the role of a novel protein in signaling events important for cell proliferation and differentiation. The protein Lin studied, labeled

Ajuba, was shown to link reception of a signal to other known intracellular signaling pathways. Her experiments provide important new information on a key signaling pathway.

Dickman worked with Robert W. Burgess, Ph.D., a postdoctoral fellow in anatomy and neurobiology in the laboratory of Joshua R. Sanes, Ph.D., professor of neurobiology in the medical school. Dickman constructed altered versions of an extracellular matrix molecule called agrin and determined the effects on differentiation of neurons.

Little was previously known about the interaction of neurons and agrin. Dickman's experiments provide insight into the different portions of the agrin molecule that are important for neuronal interactions and identified the cell surface receptor important for this reaction. The experiments are the basis for developing an understanding of agrin adhesion and signaling.

Because of her outstanding experience in laboratory research, Lin has changed career goals from medical school to research and has applied to several M.D./Ph.D. programs. Dickman will join a Harvard University Medical School Ph.D. program in the fall.

Campus Authors

Donald H. Matthews, Ph.D., visiting assistant professor of African and Afro-American studies in Arts and Sciences

Honoring the Ancestors: An African Cultural Interpretation of Black Religion and Literature

(Oxford University Press, 1998)

Donald Matthews affirms once and for all the African foundations of African-American religious practice. His analysis of the methods employed by historians, social scientists and literary critics in the study of African-American religion and the Negro spiritual leads him to develop a methodology that encompasses contemporary scholarship without compromising the integrity of African-American religion and culture.

Because the Negro spiritual is the earliest extant body of African-American folk religious narration, Matthews believes that it holds the key to understanding African-American religion. He explores the works of such seminal black scholars as W.E.B. DuBois, Melville Herskovits and Zora Neale Hurston, tracing the early development of the African-centered approach to the interpretation of African-American religion. This

approach involves "cultural/structuralism," the author's term for the method used by DuBois, Herskovits and Hurston that emphasizes the "thick reading" of narrative expressions. Such a reading allows the scholar to identify the cultural significance of particular oral and written texts and serves as a point of identification and a cultural link between African and African-American religion.

Matthews' close analysis of the spiritual employs a dialectical and postmodernist reading and reveals a religious philosophy that addresses the deepest concerns and desires of Africans in America. These concerns are cultural, political and psychological, but are ultimately related to African religious structures of meaning.

(Text from cover jacket.)



Matthews: Lessons from Negro spirituals

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

Business school to honor five alumni

Five alumni excelling in business and in service to the John M. Olin School of Business will be honored at the school's 13th annual Distinguished Alumni Awards dinner Tuesday, May 4, at the Ritz-Carlton St. Louis, Clayton.

Stuart I. Greenbaum, Ph.D., dean of the business school, announced that the honorees are John K. Wallace Jr., who will receive the Dean's Medal, awarded to special friends whose dedication and service to the school have been exceptional, and Edward C. Gomes Jr., Jerald L. Kent, Edward A. Mueller and Gurpreet (Pete) Singh, who will receive Distinguished Alumni awards honoring business school alumni who have attained distinction in their careers.

Wallace, who received a master's of business administration degree (MBA) in 1962, is a member of the business school's National Council and is leading the effort to raise the school's part of the Campaign for Washington University. In 1997, he and his wife endowed the John K. and Ellen A. Wallace Distinguished Professorship in their names. A University trustee, his family ties to the University are long-standing. His grandfather, Harry Brookings Wallace, was the equivalent of the chairman of the Board of Trustees for nine years and acting chancellor for nearly a year.

John Wallace has received the University's Distinguished Alumnus Award and the school's Distinguished Business Alumnus Award. In his career, he became the fourth generation to work for Cupples Co. Manufacturers, a venerable St. Louis company, and rose to the position of executive vice president and president of the charcoal subsidiaries. In 1981, Wallace turned entrepreneur, purchasing a subsidiary he led, renaming it Imperial Products. When he sold the company in 1989, it was the third-largest recreational and the largest

industrial charcoal operation in the nation. That same year, Wallace founded The Regency Group, a mid-sized holding company in Clayton, Mo. Semi-retired, he is a member of the St. Louis Cardinals ownership group.

Gomes, who received a bachelor of science in business administration (BSBA) degree in 1955, served in the U.S. Air Force and afterward began working for Missouri Petroleum, a St. Louis-based road-maintenance contracting and asphalt supply company of which his father was president. While working, he took night classes toward an MBA degree and graduated with honors in 1968.

Two years later, he became president of the company, and, since 1980, he has been president and chief executive officer of Lionmark Construction Cos., the holding company for it and six other affiliates, including Pace Construction Co. Their success is linked to road- and bridge-building projects in six states, and last year Lionmark's revenue jumped to \$107 million. Gomes, who taught finance and entrepreneurship at the University, has been a leader in professional organizations and a director of many nonprofit organizations.

Kent, who received a BSBA degree in 1978 and an MBA degree in 1979, is co-founder and president of Charter Communications, the sixth-largest U.S. cable television company. The company, based in the St. Louis area, has achieved remarkable growth since beginning in 1993, thanks in large part to Kent's deal-making skills. It recently announced six acquisitions of cable television companies, giving it 3.7 million customers. Kent, who graduated with honors and became a certified public accountant, previously was executive vice president and chief financial officer at Cencom Cable Television, and was tax manager at

Arthur Andersen & Co., where he specialized in the telecommunications industry.

Mueller, after 20 years of work experience with Southwestern Bell Telephone, went back to school on weekends to earn an MBA degree in 1988. His career with the company began with a summer job as a student engineer, and he advanced through a number of positions in network operations, customer service, marketing, sales, strategic planning, corporate development, and government and regulatory affairs before becoming president of Southwestern Bell.

He also worked for its parent company, SBC Communications, and affiliate, Pacific Bell, based in San Ramon, Calif. He became president and chief executive officer of Pacific Bell in 1997, responsible for all operations, sales and services for the 15 million customers of Pacific Bell and Nevada Bell.

Singh, who received an MBA degree in 1954 and an honorary doctoral degree from the University in 1987, has been called the "father of modern electronics" in India. After graduation, he returned to Delhi and began businesses in refrigeration and construction. Then, on a shoestring budget, he began Continental Device India, the first micro-chip company in India, which became India's leading semiconductor company. Singh is chairman of it and several other companies. He has served as president of the prestigious Confederation of Indian Industry and other industry associations, and he has been a consultant and visiting faculty member and governing board member of several educational institutions. Singh's longstanding support of the University continues as he serves on its International Advisory Council for Asia.

For more information and reservations, call 935-5179.

Washington People



Nancy Morrow-Howell, Ph.D. (left), works with Cathy McDougall, who will receive a master's in social work degree this spring with a specialization in gerontology.

Understanding the elder-care struggle

Morrow-Howell knows the obstacles to meeting challenges facing seniors

By GERRY EVERDING

Nancy Morrow-Howell knew how tough it could be. She had spent nearly a decade researching how families often struggle to help loved ones cope with the challenges of aging, how hard it sometimes is to pull together just the right network of relatives, friends, agencies and programs to help a cherished grandmother, father, aunt or husband go on living with a degree of independence and dignity.

Still, nothing she had learned quite prepared her for the strains of helping her own family meet the needs of a grandmother who had grown frail and dependent.

"I was the family expert on these issues, so naturally everyone turned to me when something needed fixing," said Morrow-Howell, Ph.D., an associate professor at the George Warren Brown School of Social Work and a section editor for *The Gerontologist*, a leading multidisciplinary journal on aging issues.

Frustrating process

"The process was frustrating for me because I knew how the system worked," Morrow-Howell said. "I knew about Medicare and Medicaid, about visiting nurses and nursing homes, about special programs for transportation and meals. But knowing these programs was no guarantee I could solve my grandmother's problems. Some things I could fix, but I felt as helpless as the next person when it came to fixing the system. I couldn't go out and make nursing homes a better place to live."

Morrow-Howell admits being a bit humbled by the challenge of caring for her own elderly relative, but she should not have been surprised.

For much of her career, she has explored strains that family care giving places on individuals, especially members of the "sandwich generation" — adults struggling to tend their own children while simultaneously caring for aging parents.

Her research, funded in part by the National Institutes of Health, shows that government institutions and other agencies provide only a small percentage of elder care, while most of the burden falls on already stressed adult

children. Her studies confirm that one in four elderly patients gets inadequate home care, in part because caregivers are overwhelmed by other duties.

Families do their best, but modern society can make elder care a logistical nightmare. More women work full time. More children take jobs in distant places. Suburban sprawl and increased reliance on the auto can leave elders stranded in their own homes. Morrow-Howell documents this isolation, but she also suggests changes to bring elders into the care-giving network and

"I got into aging research by chance, but it's been a passion of mine ever since."

improve their quality of life.

"My research looks at who needs services, who actually gets them and what families can do to assist in the process," she explained.

It was Morrow-Howell's desire to be closer to her own extended family that brought her to Washington University. A native St. Louisan, she'd been on the road since earning bachelor's and master's degrees in social work from the University of Kansas in 1974 and 1975. For five years, she did clinical social work at psychiatric treatment and juvenile correction centers in Topeka, Kan. There she met her future husband, Michael Howell, also a social worker. The couple moved west, and she enrolled at the University of California at Berkeley, graduating in 1984 with a doctorate in social welfare.

"I wanted to get my doctoral degree in social work and do research and academics, but I was not particularly committed to any one area of study," Morrow-Howell said. "I had a knack for statistics, and a professor invited me to help with a research project that happened to deal with geriatric services. I got into aging research by chance, but it's been a passion of mine ever since."

While looking for a faculty position, Morrow-Howell felt the tug of hometown ties and persuaded her husband to take a chance on St. Louis. The couple moved here with a 6-month-old baby and not a job between them. She found work as an adjunct professor at Maryville University

and was soon invited to join a research project at Washington University. She became assistant professor at the social work school here in 1987 and associate professor in 1993.

Michael Morrow-Howell now works as a computer systems analyst with Grace Hill Neighborhood Services Inc., a nonprofit settlement house that provides many services to low-income residents in eight neighborhoods. Their children, Claire, age 16, and Matt, age 14, both attend Ladue High School in Olivette.

Morrow-Howell continues to explore issues of deep concern to the elderly and their families. Through a large grant from the National Institute of Mental Health, she is studying the health and mental health needs of older adults after hospitalization for depression. By raising awareness of pitfalls in the informal care network and helping providers recognize special needs, her studies are credited with improving clinical case management and discharge planning for older adults.

Widely published

Her research has appeared in many of the top academic journals in her field, including *The Gerontologist*, *Social Work* and the *Journal of Social Service Research*. Her contributions were recognized in 1998 when she was elected a fellow of the Gerontological Society of America.

While juggling the demands of teaching, research and family, Morrow-Howell finds time to spend in her garden and to volunteer in the community. She

currently serves on advisory boards for at least six St. Louis organizations, including the Jewish Community Center, the Older Women's League and the Alzheimer's Association.

She also has held a range of leadership positions in the social work school, including 10 years as coordinator of the gerontology concentration and five as curriculum chair. Her teaching has earned the enthusiastic praise of students and several awards, including distinguished faculty honors from both the school and the University in 1987.

"Nancy is well known among students for her commitment to teaching and for her willingness to make herself available to students seeking advice on career choices," said Enola K. Proctor, Ph.D., the Frank J. Bruno Professor of Social Work. "She makes a point of staying in touch with students after they've left the school, which might be one reason the school's Alumni Association chose her for their first Excellence in Teaching Award."

Morrow-Howell has spent much of her career seeking solutions for the neediest and most isolated seniors, but recently she has become enthusiastic about an emerging focus in her field — finding ways to help an increasingly healthy, wealthy and wise segment of the elderly population remain mobile and productive well into their golden years.

Productive aging

"For years, our perspective on old age has been dominated by the three Ds — Depression, Dementia and Disability," she said. "This idea of all old people as being needy and dependent has never been very accurate, and now that the baby boomers are growing older, they are demanding that these attitudes change. Aging is not a disease and they want the world to know it."

The growing "productive aging" movement aims to harness the untapped potential of senior citizens and use it to strengthen communities through volunteer work, mentoring programs and other social contributions. Morrow-Howell welcomes the fresh perspective on aging, but she doesn't want us to forget that many seniors still need help accessing basic human services.

"I'm excited about the promise of a more productive aging for the majority of our senior population," she said, "but as a social worker, it's difficult for me to ignore that segment of the senior population that needs help the most — that's what social work is all about."

Nancy Morrow-Howell, Ph.D.

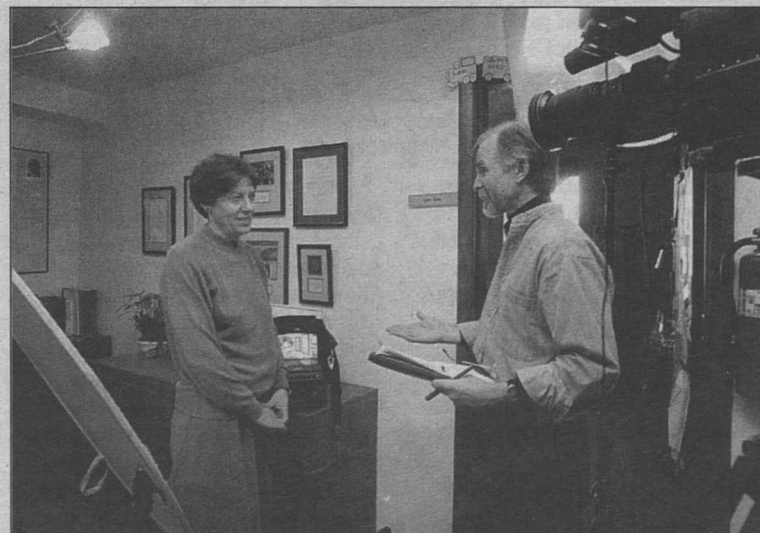
Born and raised in St. Louis

Education University of Kansas, B.A., M.A.; University of California at Berkeley, Ph.D.

Position Associate professor, the George Warren Brown School of Social Work

Family Husband, Michael Morrow-Howell; daughter, Claire, 16; son, Matt, 14

Avocations Gardening, community volunteering



Morrow-Howell explains "Links-Plus," a hotline she developed with a local agency to provide regular phone counseling and support to depressed elders in the community, for an American Association of Retired Persons video. The service has become a national model for getting assistance to suicidal elders.