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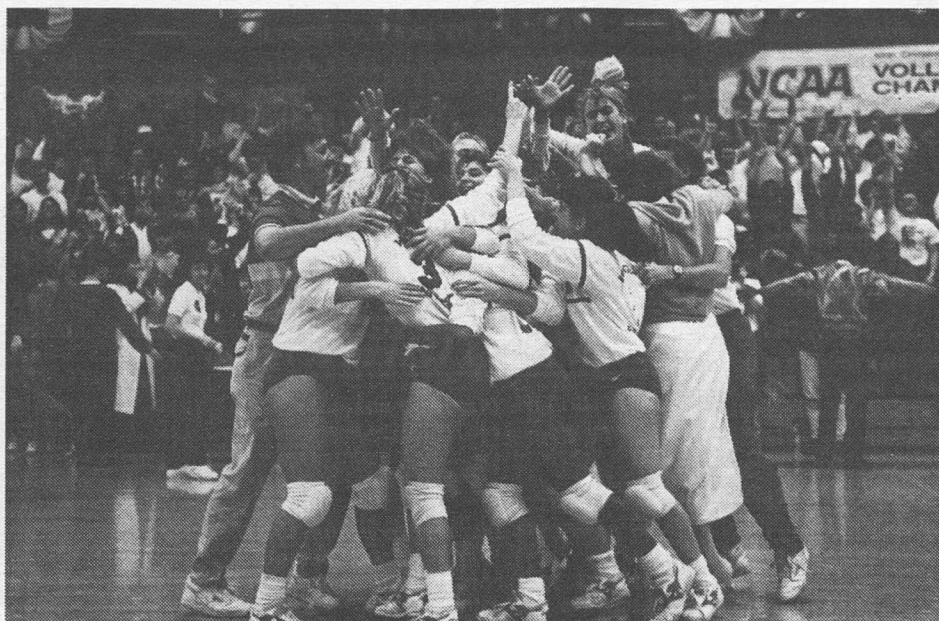
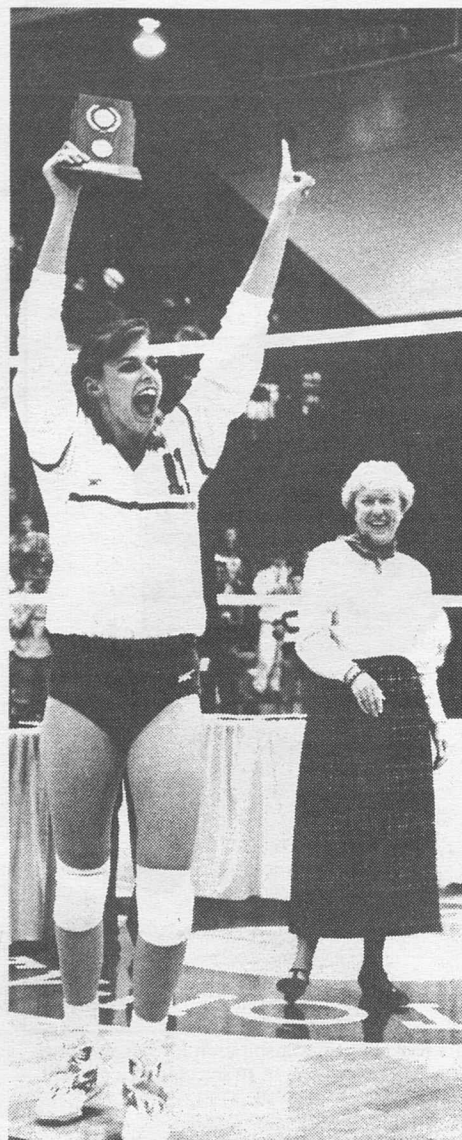
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RECORD

Washington
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Vol. 16 No. 14/Dec. 5, 1991



Above: The volleyball Bears celebrate their Nov. 23 victory over the University of California-San Diego Tritons. The win elevated them to the rank of NCAA Division III champions. At the far left: Sophomore Amy Sullivan receives her individual championship trophy, as Elizabeth Danforth, wife of Chancellor William H. Danforth, looks on. Sullivan was named to the six-player all-tournament team. Left: Teri Clemens, the national coach of the year, shares a hug with senior Joanie Subar, All-American.

Champions!

Bears win NCAA Division III volleyball crown

Picking themselves up from the proverbial canvas, the Washington University volleyball team rallied in dramatic fashion Nov. 23 to capture their second NCAA Division III title in three years.

Starting off, the Bears were down two-games-to-one to the University of California-San Diego Tritons. The Tritons are six-time champions. Despite that fact, the Bears clawed back from deficits of 11-4 and 12-7 in game four en route to a thrilling 14-16, 15-6, 9-15, 15-13, 15-8 victory in front of a Division III record crowd of 3,423. The championship was held in Washington's Field House for the third consecutive year.

The contest had all the makings of a classic from the outset.

- UCSD ended the regular season atop the polls. Washington University was ranked second.

- The pairing was a rematch of last year's final, which UCSD came back to win in five games.

- UCSD had not lost a Division III match since October 1990, when the Tritons fell to the Bears.

- Washington University had built a 22-match home winning streak, dating back to last year's loss to UCSD in the finals.

But all the pre-match hype quickly paled by comparison during the two-hour, 31-minute marathon.

Washington University (42-4) burst from the chute in game one, building an 11-3 lead behind freshman Anne

Quenette's five kills. The Bears quelled a Triton rally and Quenette added four more kills to give the Red and Green a 14-10 cushion. However, after several Bear mistakes and three big Triton blocks, UCSD pulled out a 16-14 comeback.

UCSD's momentum carried over to game two as the Tritons gained a quick 3-1 advantage. Washington counter-punched with eight straight points on the strength of three kills by sophomore Leslie Catlin and four kills and the 136th jump service ace of the season by senior All-American Joanie Subar.

UCSD put a temporary halt to the Bear flurry with a pair of kills, but the Bears closed out the 15-6 win with two kills each from sophomore Amy Sullivan and junior All-American Lisa Becker.

Again, momentum carried over into game three as the Bears charged to an 8-4 lead behind Becker. At this point, UCSD's Elizabeth Tan, the Division III Player of the Year, asserted herself. Two Tan blocks and one kill set off a 9-0 Triton run. The Bears managed a point on a Quenette kill, but Tan added another block and one more kill to polish off a 15-9 victory.

Game four began with a seemingly endless tug-of-war. Eleven of the first 12 serves resulted in side-outs, with nine different players notching kills. The two teams slowly seesawed their way to 4-4, before the Tritons appeared to floor the Bears with seven straight points for an 11-4 lead.

That's when Washington University's head coach Teri Clemens summoned a seventh player. Actually, 3,423 of them.

"The crowd wouldn't let us die," said a jubilant Clemens, who was named Division III National Coach of the Year by her peers earlier in the week. "They pulled us out of the hole. And those holes don't get much deeper."

Quenette started the comeback with a block of All-American setter Julie Fabian. Two UCSD misfires were

followed by a pair of aces by Becker. All of a sudden, the Tritons' lead had shrunk to 12-11. Three kills by Subar helped the Bears pull ahead 13-12 and a Sullivan ace brought the Bears to game point. UCSD All-American Dana Simone doused the crowd for an instant with a kill and the Tritons pulled within one point when Becker's attack found the net. Becker quickly atoned with two massive kills on quick sets from All-American setter Kelley Meier and the Bears had knotted the match.

With the crowd in hysterics, the fifth game was a blur of Quenette and Subar kills. Washington darted to a 4-0 lead and never trailed by less than three points. Two blocks by Becker gave the Bears an 11-3 lead. Tan led the Tritons back to 13-7, but Quenette drilled her 23rd kill of the match and Subar capped the championship by crushing her 22nd kill.

Four Bears — Meier (69 assists, 19 digs), Subar (22 kills, .347 hitting percentage, 27 digs), Quenette (23 kills, 32 digs, five blocks), and Sullivan (13 kills, .323 hitting percentage) — were named to the six-player all-tournament team.

The volleyball Bears are: freshman outside hitter Amy Albracht (Edmond, Okla.); middle blocker Becker (Dallas, Texas); outside hitter Catlin (Lawrence, Kan.); freshman middle blocker Nicki Hagan (St. Louis, Mo.); freshman outside hitter Liz Jokerst (Farmington, Mo.); freshman outside hitter Hyon Joo (Anchorage, Alaska); junior outside hitter Michelle Kirwan (Tampa, Fla.); sophomore middle blocker Christine Masel (Raytown, Mo.); senior setter Meier (St. Louis, Mo.); freshman middle blocker Erin Nissen (St. Paul, Minn.); outside hitter Quenette (Springfield, Ill.); sophomore setter Angela Suarez (St. Louis, Mo.); outside hitter Subar (Elwood, Ill.); and sophomore middle blocker Sullivan (St. Louis, Mo.)

Three University professors selected as bibliography editors

Washington University is the only university nationwide to have three faculty members serve as section editors for the American Historical Association's upcoming bibliography, *The Guide to Historical Literature*.

The faculty members are Derek M. Hirst, Ph.D., professor of history; Richard J. Walter, Ph.D., professor of history; and Patty Jo Watson, Ph.D., professor of anthropology. In all, 46 faculty editors from across the country will contribute to the project.

Nearly all U.S. historians belong to the American Historical Association (AHA), which has a membership of 10,000. The association is considered the major professional organization for historians.

Two guides have been published in the past, one in 1931 and the other in 1961. The current project aims to produce a new guide by 1994-95. The two-volume edition, which will be published by Oxford University Press, will include an updated bibliography of 27,000 major historical works in various fields. The volumes will contain 46 sections and extensive cross-indexing.

The 46 section editors were selected out of the AHA membership pool of 10,000 historians. "It's very unusual for one campus to have such breadth of expertise," said David Konig, Ph.D., professor of history and chair of the department. "To have three faculty editors is a recognition of high professional regard by the most important learned society in the discipline."

Besides writing themselves, most of the section editors have contributing writers to help assemble the extensive amount of material. Hirst will oversee the section on the British Isles from 1450 to the American Revolution. He has nine contributing writers.

'It's very unusual for one campus to have such breadth of expertise. To have three faculty editors is a recognition of high professional regard by the most important learned society in the discipline.'

— David Konig

Walter will edit a section on Latin American history since 1800. For his section, writers are researching literature on Mexico, Brazil, Central America, the Andean Republics and the Caribbean. He will write the introduction.

Watson's section will focus on pre-history. She is on leave at the Center for Advanced Study in Behavioral Sciences in Stanford, Calif.

A fourth member of the faculty, Kristin E. S. Zapalac, Ph.D., assistant professor of history, is writing part of a section on the German States and Habsburg empire to 1800.

Writing already has begun as the historians work to finish copy by October 1992. "It's quite a challenge to express the state of scholarship over a whole period at this one point in our generation. Scholarship has changed remarkably in the last generation and whole new fields have opened up,

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Inside: **MEDICAL RECORD**

- Neuroscience meeting provides insight to memory, writer's cramp. Page 4

- Additional drugs can improve standard heart attack treatment. Page 5

- Sick infants need even more TLC. Page 6

Blast off!

Second fashion design student competes in international show

For the second year in a row, a Washington University fashion design student will compete in an international fashion show. Senior Kerri Stecher's design was selected as one of 10 U.S. entries in the prestigious Air France international student fashion competition to be held in Paris.

Stecher's design is a one-piece solid black catsuit with a long jacket in orange, royal blue and magenta zigzag stripes outlined in black.

Jeigh Singleton, head of the fashion design program, is justifiably proud. "I'm so proud of Kerri I could burst. I am really excited that the program has begun to gain national recognition through our students."

This year's design problem required students to create an outfit for a fashionable woman who would be taking a long trip — by steamer, passenger train, automobile or rocket ship. The design also had to reflect a characteristic of the designer's country.

"The minute I saw 'rocket ship' I knew that's what I would design for," Stecher recounted. "But, as I tried to think of how to represent America, the thought I kept coming back to was that there is no one American ethnicity. Finally, I found fabrics I liked and those colors pointed me in the direction of Native American. The colors I chose are a little bolder, but are definitely reminiscent of earth tones in Native American art. Also, the large zigzag patterns in Navajo blankets reminded me of the flare of a rocket. The two images, one of high-tech space travel and the other of Native American culture tied to the earth and to nature, seemed like opposite ends of a spectrum and I thought, 'Why couldn't I bridge both ends of the spectrum with my design?'"

Although the St. Louis native had been interested in fashion illustration for as long as she can remember, she didn't know how to sew a dart or even thread a sewing machine when she came to the University.

"I was always doodling and sketching clothes, but I was never really interested in actually making them," Stecher says. "Then I came here and Jeigh pointed out to me that customers won't buy a drawing, they want the outfit."

So Stecher learned to sew.

"Kerri is a wonderful example of the Washington University fashion design student," Singleton says. "I prefer people who can't sew or can't draw, but have ideas about fashion. The goal of our program is to teach students how to solve apparel design problems, not just to make a pretty frock. If you can solve design problems, you can do anything."

"With Jeigh it's like being thrown into the deep end and being forced to learn to swim," Stecher says, smiling. "He forces you to do a lot of things on your own so you really learn."

Stecher has learned to persevere. The patternmaking was a particularly tough challenge.

"In patternmaking, first you do a muslin. It's a cloth version of the pattern that you then transfer to paper. For this project I did three of them and I was still unsure that my idea would work. Finally, time was running out so I just had to go for it. The seams between the different colors were the hardest to line up. I spent hours ripping out and readjusting those seams."

The competition, which is held Dec. 18 in Paris, will be judged by designers such as Christian Lacroix, Jean-Louis Scherrer, Angelo Tarlazzi and Sonia Rykiel. Air France has held the competition for nine years and Washington University has participated for five years — as long as Singleton has been here.

The U.S. qualifying round was held in New York, and the winners were announced Nov. 14. The 10 contestants were selected from 55 entries. This year, instead of having a New York fashion show as in previous years, the entrants submitted two photographs and one drawing of their design.

In order to select two Washington University representatives, Singleton held a contest among all 12 fashion design seniors. The students submitted their design ideas in unmarked manila folders and three professors, Singleton, Mary Cobb Martin and Cathy Rodgers, judged the submissions. In addition to Stecher, they chose a design by Kyle McGill.

Singleton arranged for local fashion photographer Charles Marten and several local professional models to donate their time to the project so



Fashion flare: Fashion design major Kerri Stecher used a rocket flare as inspiration for her winning design, which is modeled by senior Erika Brown. Stecher's design was one of 10 selected to represent the United States at an international student competition in Paris on Dec. 18.

Stecher and McGill could submit top-quality photographs to the judging committee.

Stecher, who has studied French since sixth grade, is thrilled about going to Paris.

"Never mind what happens at the fashion show," she says. "It is such an honor just to be chosen to represent the United States. I can't get over going to Paris for free. I've never won anything in my life."

The Air France prize provides airfare and one week of hotel accommodations at Hotel Meridien Montparnasse.

Stecher attended the competition last year as a spectator by taking advantage of a special Air France travel package offered to fashion design students. She and two other students in the fashion design program were there to see fellow Washington Univer-

sity student Nancy Freund win the "Prix d'Encouragement" — the only American to place in the competition.

When Singleton first told her that she had won, Stecher says she didn't believe him.

"That's just the kind of joke he would pull," says Stecher, laughing. "He's done it before, but finally he got me to believe him and I just started jumping up and down and screaming and yelling."

"My parents are both really proud of me," says Stecher. "But my mom never doubted I would get picked. When she first saw my design she said, 'You're going to Paris.'"

— Debby Aronson

RECORD

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European studies programs discussed

Directors of the nation's 14 leading (West) European studies programs will discuss "The Status and the Future of European Studies" during a two-day workshop in St. Louis on Dec. 7-8.

Washington University's European Studies Program, under the direction of Paul Michael Lutzeler, Ph.D., is hosting the workshop, which will be held at the Holiday Inn Clayton Plaza.

Lutzeler will meet with directors of European studies programs from Georgetown, Harvard, University of California at Berkeley, Cornell, Johns Hopkins, Columbia, New York University, Indiana, Minnesota, Pittsburgh, Vanderbilt, Duke and Stanford.

"The workshop is designed to explore the profile and the funding of existing programs in each school, to conduct a brainstorming session about new ideas in light of the changing situation in Europe, and to discuss possibilities for promoting future cooperation among the European studies programs at American universities with each other and with similar programs in Europe," Lutzeler said.



Earthquake experts: Douglas Wiens, Ph.D., associate professor of earth and planetary sciences, and Michael Wyssession, Ph.D., assistant professor of earth and planetary sciences, view the University's seismograph, which was installed in Wilson Hall last summer. The seismograph already has recorded a minor earthquake in eastern Illinois in November and a much bigger event off the California coast earlier in the year. One year ago this week, many Midwesterners wondered nervously if an earthquake predicted by the late Iben Browning, a New Mexico scientist, would strike the New Madrid Fault in southeast Missouri. The week passed without a tremble, but not before the skeptical seismologists Wiens and Wyssession, who was then at Northwestern University, handled scores of calls from shaky residents and media wanting to know if the prediction was valid. The seismograph is available for public viewing weekdays during working hours.

NOTABLES

Karen L. Brock, Ph.D., assistant professor of art history and archaeology, delivered a paper titled "Sanetaka and the Making of a Japanese Picture Scroll" at an international symposium. The symposium was held in conjunction with the exhibition "The Triumph of Japanese Style: 16th-century Art in Japan" at the Cleveland Museum of Art.

Don Conway-Long, instructor in the Women's Studies Program, was the keynote speaker at the Ontario Campus Men's Conference: Strategies for Change held at Victoria University in the University of Toronto. He spoke on "Personalizing the Political: Bridging the Individual Self to a Global Perspective."

Alan Daugherty, Ph.D., assistant professor in the Cardiovascular Division, received an Established Investigator Award from the American Heart Association. The aim of the award is to assist promising physicians and scientists in developing independent careers in health sciences. This is a five-year stipend award that also includes some project support.

Mary Ann Dzuback, Ph.D., assistant professor of education, is the author of *Robert M. Hutchins: Portrait of an Educator*, recently published by the University of Chicago Press.

Charles Lucore, M.D., assistant professor of medicine, has been awarded a Clinical Scientist Award by the National Center of the American Heart Association. The award is meant to encourage promising clinically trained physicians to undertake careers in investigative science. The award is for an initial three-year interval under the guidance of preceptor **Burton E. Sobel**, M.D., the Tobias and Hortense Lewin Professor of Cardiovascular Diseases.

Terry McNearney, M.D., instructor in the Department of Medicine, received the Clinical Research Trainee Award at the Midwestern American Federation for Clinical Research meeting in Chicago. Her presentation was titled "Heterogeneity of the V3 Loop of HIV-1 Envelope Sequentially Derived From Three Adults." This work describes the nucleotide mutations noted in naturally occurring isolates, which may enhance HIV-1 virulence during illness.

Laura Poppo, Ph.D., assistant professor of organization and strategy in the John M. Olin School of Business, presented a paper, titled "Asymmetric Information and Price Adjustments in Market and Profit Center Exchanges." The paper was part of a symposium, titled "Recent Developments in Business Policy," at the ORSA/TIMS conference.

Gene M. Zafft, J.D., L.L.M., adjunct professor of law in the Graduate Tax Program and current chair of the Missouri Housing Development Commission, was elected to the board of directors and the executive committee of the National Council of State Housing Finance Boards at its 21st annual meeting in Seattle, Wash. Zafft was appointed to the Missouri Housing Development Commission by Gov. John Ashcroft in 1988.

Have you done something noteworthy?

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



Changing hands: Washington University Chancellor William H. Danforth and Thomas A. Hays (left), president of the May Department Store Co., recently signed ceremonial papers, which recognized the transfer of the Famous-Barr property in Clayton to the University.

Introduction to new faculty

The Record is running a series profiling new faculty on the Hilltop and Medical campuses.

Diane E. Beals, Ed.D., assistant professor of education, comes to the University from the Harvard Graduate School of Education, where she served as a teaching fellow while completing her doctorate in human development. She received her bachelor's degree in general science and elementary education, cum laude, in 1978 from Seattle Pacific University. She received her master's degree in developmental reading in 1984 from the University of Washington and her doctorate in 1991 from Harvard. She has many research and teaching interests, including child language, development of discourse skills and individual and cultural differences in language and literacy development. She has published many articles, including "Stories From the Classroom: Rate of Response to Personal Event Narratives in a Computer Network," published in 1991 in the Quarterly Newsletter of the Laboratory of Comparative Human Cognition.

Rebecca L. Copeland, Ph.D., assistant professor of Japanese language and literature, comes to the University from the International Christian University in Tokyo, where she was an assistant professor in the humanities division and coordinator of education for the summer courses in Japanese language. She received her bachelor's degree, with high honors, in 1978 from St. Andrews College in North Carolina and her master's degree and doctorate in 1982 and 1986, respectively, from Columbia University. She also served as a research affiliate from 1983-1984 at Tokyo University. She has published several articles,

translations and book reviews. Her book, *The Sound of the Wind: The Life and Works of Uno Chiyo*, is forthcoming.

M. Bruce Fegley Jr., Ph.D., associate professor of earth and planetary sciences, comes to the University from the Lunar and Planetary Institute in Houston, Texas, where he was a staff scientist. He received his bachelor's degree in chemistry in 1975 and his doctorate in earth and planetary sciences in 1980 from the Massachusetts Institute of Technology (MIT). At MIT, he was a principal research scientist in the Department of Earth, Atmospheric and Planetary Sciences from 1984 to 1990. Fegley's principle research interests involve the experimental and theoretical study of chemical processes in the early solar system, on planetary surfaces, and in planetary atmospheres.

Marilyn A. Friedman, Ph.D., associate professor of philosophy, comes to Washington University from Purdue University, where she was a visiting assistant professor of philosophy. She received her bachelor's degree in political science in 1967 from Washington University and her doctorate in philosophy from the University of Western Ontario, London, Canada, in 1974. In addition to publishing many articles on ethics, social philosophy, and feminist theory, Friedman has received several research grants, the most recent being the National Endowment for the Humanities Fellowship for College Teachers and Independent Scholars. She has a forthcoming book, titled *What Are Friends For?: Essays on Feminism, Personal Relationships, and Moral Theory*, to be published by Cornell University Press.

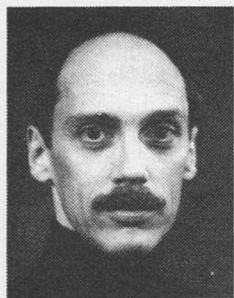
Dance Professor Michael Podolski dies

Michael Ballard Podolski, assistant professor of dance in the Performing Arts Department, died of AIDS-related lung cancer Nov. 10 at the age of 49.

Podolski, a native of Denver, had taught dance technique, improvisation and composition and choreographed at the University since 1984. Prior to coming to St. Louis, Podolski performed for many years as a professional dancer with the New York-based Murray Louis and Alwin Nikolais dance companies.

In 1966 Podolski made his professional debut as a member of the Nikolais Dance Company in "Vaudeville of the Elements." He toured the United States, Canada and Europe with the company and performed on television in Sweden, Germany, Yugoslavia and in the United States.

Podolski, who used the stage name Michael Ballard, joined the Murray



Michael Ballard Podolski

Louis Dance Company in 1969. Three years later he became the company soloist. Louis created the title role of "Scheherazade" and the ringmaster role in "Hoopla" specifically for him. Dance Magazine featured a full-page photograph of Podolski in his "Scheherazade" role on the cover of the December 1975 issue. During his career with the Murray Louis Dance Company, Podolski appeared with Rudolf Nureyev on major stages in London, Paris and on Broadway.

Beginning in 1974, Podolski was the dance captain for the Louis com-

pany, conducting much of the company rehearsals in preparation for Louis' final comments and corrections.

In 1983 Podolski returned to the Nikolais Dance Company as assistant artistic director. He continued in that role until coming to the University the following year.

In addition to his teaching responsibilities, Podolski continued to perform and choreograph while at the University. He appeared on numerous occasions with the St. Louis Dancers under the artistic direction of Annelise Mertz, professor emerita of dance.

Podolski also was active in the St. Louis arts community. He served on the dance advisory board of the Missouri Arts Council and on the Edison Theatre Advisory Committee.

In 1980 Podolski co-authored *Conversations With a Dancer* with Kitty Cunningham, which featured a series of interviews about the inside life of a dancer, including touring and rehearsals. At the time of his death, he was working on a second book about dance choreography and composition.

Memorial contributions can be made to the Michael Ballard Podolski Memorial Dance Fund at the University, which has been established to provide a yearly Outstanding Choreography Prize to a student in the University's dance program. Checks should be made payable to Washington University, with Michael Ballard Podolski Memorial Dance Fund noted on the memo line. Checks may be sent to Performing Arts Department Chair, Campus Box 1108, Washington University, One Brookings Drive, St. Louis, Mo. 63130.

Podolski is survived by Norman Ader, his companion of 25 years.

Bibliography editors — continued from p. 1

such as, most obviously, in my field, gender history," Hirst said.

When completed, the guide also will be available on computer discs.

Walter said the goal is to make a more user-friendly guide.

The bibliography will be aimed toward a broad audience so informed non-specialists at community colleges and four-year colleges can use it, as opposed to limiting the work to specialists within graduate programs. "For instance, a non-specialist may have a Ph.D. in American history, but is

called on to teach a course in European history and needs to go to some source. We hope it will make easier the teaching of history in the United States," Walter explained.

The AHA seeks to promote teaching of history at all educational levels. An annual convention helps link members from around the country. The association also publishes a quarterly journal and helps members find employment. In addition, the AHA provides a listing of history teachers at all colleges and universities.

MEDICAL RECORD

Schlesinger to investigate novel antiviral drugs

A compound that in laboratory tests is 95 percent effective at blocking the spread of a strain of influenza virus has been designed by scientists at the School of Medicine.

The compound is a peptide (a small chain of amino acids) which stops the influenza virus from spreading by disabling the Velcro-like spikes the virus uses to grab hold of and infect a healthy cell, says Milton J. Schlesinger, Ph.D., professor of molecular microbiology.

Although the peptide may be years away from use in patients,



Milton J. Schlesinger

Schlesinger says his approach may provide a basic plan of attack against many viruses, including rabies, herpes, and respiratory syncytial virus (RSV), a virus harmful to

infants. Schlesinger's report, which appeared in a recent issue of *Virology*, states that the peptide inhibits formation of influenza virus in infected cultured cells.

With the flu now epidemic in many parts of the United States, attempts to find effective agents other than vaccines to block the virus' spread have been increased. This isn't likely to happen, Schlesinger says, because decades of research on viruses have led to a relatively small armamentarium compared to the wealth of antibiotics that bacterial research has produced.

The difficulty is in designing a drug that kills viruses without injuring their host cells. Because most viruses contain a small number of genes, they commandeer many gene products required for their replication from the host cell. Consequently, drugs aimed at viruses also may stop normal cellular functions, Schlesinger says.

Engineering a drug that kills the virus without killing its host is an arduous task. However, the molecule Schlesinger designed does just that. The peptide blocks the attachment of the Velcro-like spikes to the flu virus, and without its spikes, the virus can't get into a cell, Schlesinger says.

Normally, each spike is anchored to a "pocket" inside the virus. The molecules that Schlesinger and his coworkers studied are believed to fit into this pocket, preventing the spikes from anchoring. "If the pocket is filled, new viruses will no longer appear and that will be the end of the infection," Schlesinger says.

Further studies are needed to determine the effectiveness of the approach. Schlesinger recently received a four-year, \$800,000 grant from the National Institutes of Health which he will use to design smaller, more potent molecules to stop a variety of viruses, including RSV, rabies, herpes and possibly HIV. The initial research was partially funded by Monsanto-Searle.

Researchers present at neuroscience meeting



Marcus E. Raichle, M.D., professor of radiology and of neurology and neurological surgery at the School of Medicine, injects a radioactive dye into a patient to study brain function with the PET scanner.

Scientists provide glimpse of memory

First-time studies in humans show that the hippocampus, a seahorse-shaped structure deep within the brain, plays a vital role in helping recall facts and events over long periods of time.

The findings, which were recently reported at the annual meeting of the Society for Neuroscience, also demonstrate that various regions in the brain are selectively activated for different types of memory, says Marcus E. Raichle, M.D., professor of neurology and radiology at the School of Medicine. Raichle collaborated with colleagues from the San Diego Veterans Administration Medical Center.

The group used positron emission tomography (PET) to trace neuronal activation in 18 normal human subjects during memory-oriented tasks. In the study, volunteers were shown 15 common English words four to eight letters in length. The 15 words were next presented twice in succession on a computer screen at a rate of 3.5 seconds per word. Three minutes later, the participants saw 20 word stems — three-letter word beginnings — presented in succession in the same size, location and typeface as the original words. As the word stems were shown, Raichle used PET to monitor brain activation in 40 second intervals.

During the PET scan, volunteers performed one of four tasks:

- 1) **no response**, in which they viewed the word stems but made no verbal response. None of the stems could form any of the 15 words that had been presented.
- 2) **baseline**, in which they completed the word stems to form the first word to come to mind. Again, none of the word stems could form any of the 15 words that had been presented.
- 3) **priming**, in which they completed the first word to come to mind. Half the stems could form words that had been presented (in this condition, the subjects tended to complete the stems with words that had been presented).
- 4) **memory**, in which participants intentionally attempted to complete the stems to form words that had been presented. (Half of the stems could be completed to form one of the 15 words.)

The results:

- The largest blood flow change during the memory stage, compared with the baseline stage, was in the

right posterior medial temporal lobe in the area occupied by the hippocampus and an adjacent structure called the parahippocampal gyrus.

- No activation was detected in the right or left amygdala, nor was there any activation in the left hippocampal region.

The findings confirm animal studies that suggest that the hippocampus, but not the amygdala, plays a role in long-term or declarative memory, Raichle says. Declarative memory includes the acquisition and temporary storage (for several months) of conscious memory for facts and events.

Activation of the right hippocampus but not the left may show that the right hemisphere of the brain is more important than the left when processing words visually rather than semantically or phonetically, Raichle says.

While there are no immediate clinical implications of this study, Raichle says studies like this are proving interesting as a means of assigning specific functions to various areas of the brain. "Prior to this study, we had assumed that the left hippocampus would be involved in any memory task involving words. Now we know that it is the right side that is very important."

Scientist clones substance P receptor

The receptor for substance P, a small peptide that modulates biological activities ranging from smooth muscle contraction to inflammation, has been cloned by scientists at the School of Medicine.

The highly sought human substance P receptor should prove a good target for new drugs for a variety of diseases, most notably inflammatory bowel disease and certain pain disorders, says James E. Krause, Ph.D., associate professor of anatomy and neurobiology. Krause presented his results at the annual meeting of the Society for Neuroscience.

The ability to express large amounts of substance P receptor in cells will give scientists a better screening test for drugs that either block or mimic the actions of substance P, Krause adds.

Receptors for the substance P receptor are found throughout the brain and along the spinal cord, as well as on smooth muscle tissues in

Writer's cramp caused by abnormal brain function

Dramatic new images of the brain show that writer's cramp — once thought to be a psychiatric condition — can now be traced to abnormal brain function, scientists at the School of Medicine reported at the recent annual meeting of the Society for Neuroscience.

"This is the first evidence of physiological changes in the brain of patients with this mysterious disorder," says Lee W. Tempel, M.D., research instructor in neurology, who, with Joel S. Perlmuter, M.D., assistant professor of neurology, presented the findings.

People with writer's cramp suffer involuntary muscle cramps in the hand or forearm when performing specific activities such as writing or typing. In severe cases the condition can impair use of the hand, forcing those affected to learn to write with their other hand. People with a less severe form of the disorder merely experience uncomfortable cramps while writing.

Tempel and Perlmuter used positron emission tomography (PET) to track blood flow in the brain of people suffering from the disorder. PET shows changes in brain blood flow, which doctors interpret as a signal of brain activity. Blood flow abnormalities tell doctors that there may be abnormal brain function even though the structure of the brain as seen with a CT or MRI scan is normal.

While in the PET scanner, six patients from 24-72 years of age with right-handed writer's cramp and eight age-matched normal subjects had a vibrator touched to their hand. The group with writer's cramp showed 30 percent less of an increase in blood flow to the area of the brain responsible for sensing and moving the hand (primary sensorimotor area) and the area that prepares for hand movement (supplementary motor area).

Responses were diminished on both sides of the brain, although only one side showed symptoms of writer's cramp. "This was a surprise," Tempel says. "It tells us that writer's cramp involves more of the brain than we might otherwise have thought based on clinical observations."

the gastrointestinal tract and urinary bladder, and on certain immune cells and lung tissue.

The wide range of receptor distribution accounts for the diverse biological activities attributed to substance P, among them: excitatory neurotransmission, smooth muscle contraction, peripheral vasodilation, endocrine or exocrine gland stimulation, and regulation of immunologic and inflammatory responses. Substance P's role in the transmission and perception of pain is well chronicled, Krause says, although researchers have yet to pinpoint its exact mechanism of action.

Knowing the receptor DNA and protein sequence should allow scientists to further define substance P's many functions. Also, knowledge of the receptor's DNA sequence will permit researchers to explore the possibility that faulty substance P receptors contribute to a variety of diseases, Krause says.

Southeast's Stroke Belt shows high death rates

Hypertensive male veterans in the Southeastern United States have a higher mortality rate than veterans in the rest of the country, regardless of race, according to a nationwide study at the School of Medicine.

Investigators studied 5,146 male veterans who began treatment for hypertension in 1974 and 1975 at 32 Veterans Administration medical clinics around the country and looked at their mortality rates after 14 years. Researchers found that 45.8 percent of the Southeastern residents died within 14 years, compared to 38.9 percent who lived elsewhere, an excess mortality of 18 percent for those living in the Southeast, said principal investigator, H. Mitchell Perry, Jr., M.D., professor of medicine at the School of Medicine.

The study, which St. Louis University took part in, is the most comprehensive look at long-term mortality among hypertensive men to date. It allows for an unusual comparison of geographic differences in mortality within the United States, Perry said. The findings were presented at the American Heart Association meeting.

The study population was half black and half white and all were hypertensive — the only significant health problem for most — and the men tended to be economically disadvantaged.

There were no differences in mortality when comparing all whites to all blacks in the survey. There were differences between the two groups, with whites tending to be older and the blacks tending to have higher blood

pressures. After correcting for these differences, their mortality rates were the same.

By far, the largest observed difference in mortality was the 55 percent excess mortality in Southeastern blacks who were between 35 and 50 years old at the start of treatment when they were compared with comparable blacks from elsewhere in the United States. The Southeast United States is known as the Stroke Belt because it has a stroke rate at least 10 percent above the national average.

The findings showed that blacks in the Stroke Belt had a 43 percent mortality over the 14-year period, while blacks elsewhere had a rate of 33 percent. Rates for the slightly older whites were 46 percent for those in the Stroke Belt compared to 39 percent for those living elsewhere.

This study and others looking at the Stroke Belt have turned up no definite explanations for the geographic difference, Perry said. "But it is suspected that hypertension is one of the major contributors to the difference in mortality between the Southeast and the rest of the country," he said.

Death rates in Perry's study are higher than the national rate, he said. Such high death and illness rates have been noted in other studies. This may be related to VA patients being sicker than the general population, or because they are often economically disadvantaged and tend to have less and later health care, Perry said.

Aspirin, hirudin may improve standard heart attack treatment

Adding two drugs to the standard early treatment for heart attacks may help prevent blockages that often reoccur and inflict additional damage in the hours following an initial attack, researchers at the School of Medicine reported recently at a meeting of the American Heart Association.

Using an animal preparation, the investigators demonstrated that the drugs aspirin and recombinant hirudin can prevent the damaging blockage of heart vessels that sometimes occurs after the initial attack-inducing blockages are cleared away. Hirudin is a protein from the saliva of leeches produced by a recombinant DNA technology.

Hirudin and aspirin prevent clots through two separate actions. Hirudin inhibits thrombin — an enzyme that induces formation of the thread-like protein fibrin — which entangles platelets in masses to form clots. Aspirin is an antiplatelet agent that prevents blood platelets from sticking together and contributing to clotting.

"Our results support the idea that an antithrombin agent alone is not sufficient, but one will have to give an antiplatelet agent as well," to open arteries quickly and keep them open, said Dana Abendschein, Ph.D., one of the investigators.

The use of clot-dissolving drugs such as streptokinase and tissue-type plasminogen activator, t-PA, has proven to be a major advancement in treating heart attacks, Abendschein said. Given in the early hours of a heart attack, they break up clots that typically form attack-inducing obstructions at sites of atherosclerotic plaque. By restoring blood flow, they often

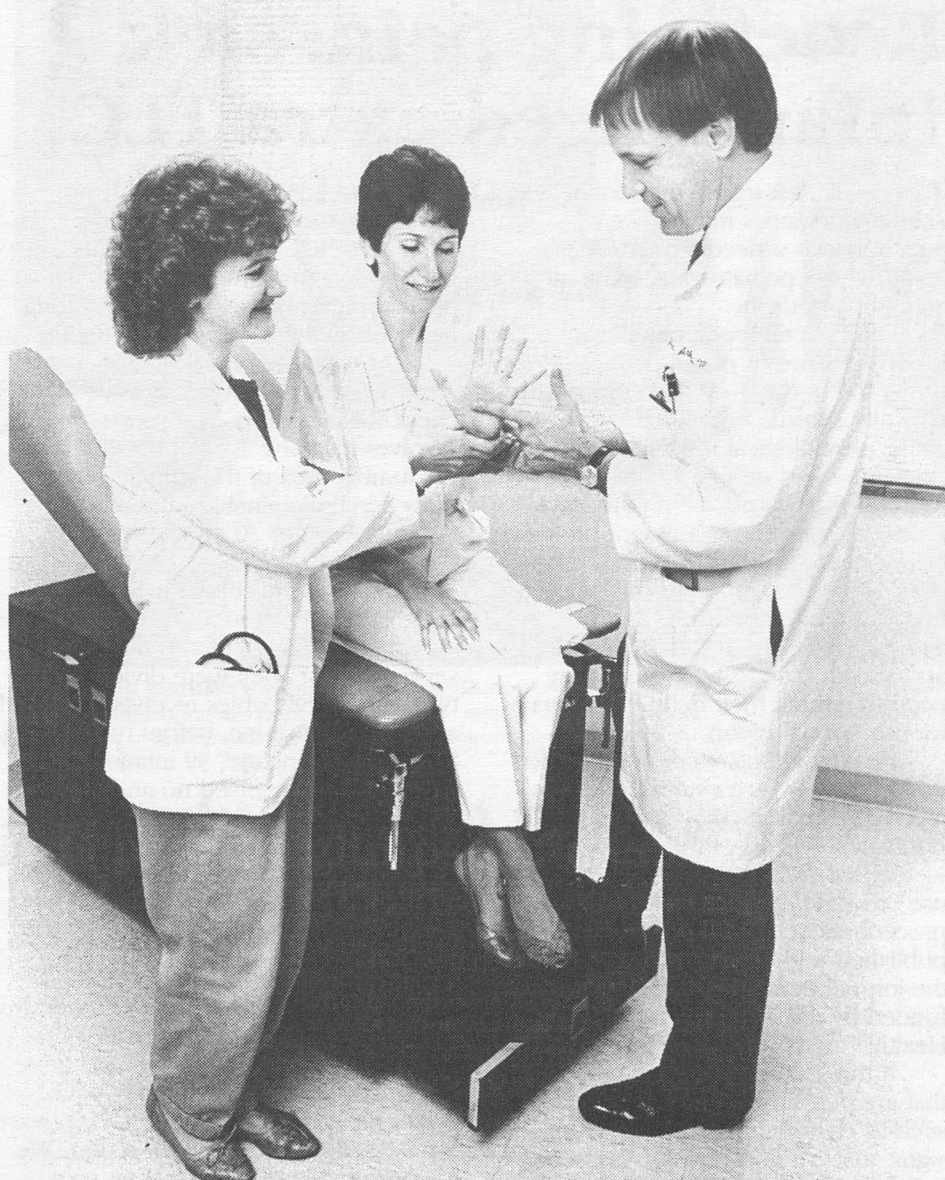
can prevent substantial irreversible damage to the heart muscle.

Yet there are limitations to this treatment, explained Abendschein, a research associate professor of medicine. Blood flow is not restored in about one third of patients. And in about 20 percent of patients in whom flow is restored, the blockages will return within about 24 hours. The reblockage occurs partly because even as these drugs clear away clots, they also promote clot formation. In addition, the drugs do not remove all of the original clot, which is a strong stimulus for new clot formation, Abendschein said.

To avoid reblockage, clinicians sometimes give heart attack patients aspirin and heparin. But neither drug so far has been effective enough, Abendschein said.

"So the search is really on for newer approaches that might be more effective than these conventional agents," he said.

In the study, Abendschein and co-authors Nelson Prager, M.D., clinical fellow in medicine, Sheryl Torr, Ph.D., research instructor in medicine, and Burton Sobel, M.D., professor of medicine, induced blood clots in the arteries of dog hearts and mechanically narrowed the artery to mimic a site of atherosclerotic plaque. They found that hirudin — already shown in their lab to prevent reblockage without the presence of an artificial vessel narrowing — and aspirin, given separately with the clot-dissolving drug t-PA, did not prevent reblockage. But when both were given together with t-PA, the drugs prevented reblockage.



John P. Atkinson, M.D., professor and head of the Division of Rheumatology at the School of Medicine, was recently recognized as an outstanding teacher.

Atkinson receives teaching award

John P. Atkinson, M.D., professor and head of the Division of Rheumatology at the School of Medicine, has been awarded the 1991 Alpha Omega Alpha (AOA) Distinguished Teacher Award. The AOA, a professional medical honor society, gives the national award each year to recognize outstanding accomplishments in teaching clinical sciences to medical students.

Atkinson, the fourth ever to receive the honor, said the award is especially meaningful because nominations come from colleagues. "This indicates that fellow faculty members and students at our school appreciate one's teaching efforts," he said. "Teaching students is an activity that I enjoy; it is refreshing and stimulates my thinking." Atkinson teaches immunology and the diagnosis of rheumatic diseases to first- and second-year medical students and conducts teaching clinics with third- and fourth-year students.

Each medical school in the country may nominate one faculty member for the award. Atkinson was chosen by William A. Peck, M.D., vice chancellor and dean of the School of Medicine, with input from faculty and students. In his nomination letter, Peck writes, "He

is an unusual lecturer who is capable of combining humor, enthusiasm and energy in his teaching style in a manner that makes students want to learn." Students, the letter states, praise Atkinson for being courteous, compassionate and putting his students at ease.

Atkinson has been recognized for outstanding teaching before. In 1980 the Washington University Department of Medicine named him teacher of the year, and in 1986 he was named teacher of the year by the medical school senior class.

Also a professor of microbiology and immunology, Atkinson studies the complement system, a group of proteins of the immune system, and how it relates to the disease lupus. He discovered a complement protein in 1985 called membrane cofactor protein, or MCP, responsible for protecting cells from being attacked by their own immune system. The protein may someday be used to protect transplant organs from rejection or to trick the body into killing its own tumor cells.

Atkinson received the \$2,500 award at the AAMC annual meeting in Washington, D.C.

Asthma study needs volunteers

An investigational drug for the treatment of bronchial asthma is being tested at the School of Medicine. The study will determine if the drug doxophylline is an improvement over currently prescribed medications.

To test this hypothesis, doctors need volunteers to enroll in a 14-week double-blind placebo controlled study comparing doxophylline with theophylline, a drug widely prescribed for bronchial asthma.

Males and females, 18 years or older, with mild to moderate asthma are encouraged to participate in the trial. People who have responded to

theophylline, either currently or in the past, are urged to apply. All participants should be non-smokers and in good physical health during the past year. In addition, female participants must practice birth control during the study.

Doctors will examine each participant eight times during the 14-week study. Medical care including pulmonary function testing and medicines dispensed as part of the study will be free.

If you are interested in participating, please call the office of H. James Wedner, M.D., the study director, at 314-362-9049.

MEDICAL RECORD

Redefining pain: sick infants need extra TLC

To a small, sick infant, the routine act of changing a diaper may evoke as painful a response as a needle piercing its spine, says a pediatric researcher at the School of Medicine.

Taking a temperature, checking blood pressure or placing an X-ray plate under the body — medical procedures typically considered innocuous — may cause physiological responses in premature and/or sick infants similar to those elicited by adults in pain, says Fran L. Porter, Ph.D., assistant professor of pediatrics, who conducted the study at St. Louis Children's Hospital. Because this group of newborns is so developmentally different from older children and adults, Porter says experts may need to rethink their definition of pain for this special group.

Healthy infants were not included in the study, which evaluated babies receiving medically necessary lumbar punctures. Results of the two-year study — the first clinical trial to look at the use of local anesthesia for bedside procedures in sick newborns — are published in the October 1991 issue of the journal *Pediatrics*. The study was funded by the National Institutes of Health.

"I think there are many procedures that are performed to care for babies, such as changing a diaper or taking vital signs, that we don't think of as being painful," Porter says. "We think of protecting babies from that which we consider painful. But in this population (premature and sick newborns), routine handling and positioning may create stress. It's possible that we may have to redefine pain for this population."

Porter says the physiological changes associated with this stress may indicate pain in this particular infant group.

Porter studied 77 infants, all of whom required neonatal intensive care and were monitored for their physiological responses to receiving a lumbar puncture. Half received anesthesia, half did not. A lumbar puncture, which adults consider painful, is routinely performed with anesthesia in adults and

older children. Infants routinely are given anesthesia during surgical procedures. For bedside procedures like the lumbar puncture, anesthesia has not been commonly used because of long-held beliefs that infants do not feel pain.

In premature or sick infants, a lumbar puncture frequently is used to check for infections. The procedure involves inserting a small needle into the lumbar area of the spine to withdraw cerebral spinal fluid. It usually takes from six to 20 minutes to complete.

Babies in the study ranged in weight from 1.5 pounds to more than eight pounds and suffered mild to severe illness. They were divided into two groups: 38 babies received the local anesthetic, lidocaine, before undergoing the lumbar puncture; 39 infants in the control group received no anesthesia. The groups were similar in birth weight, study weight, age at time of study, gender, race, therapy and neurological status.

Monitoring Physiological Responses

"We looked at a variety of measures to determine the infants' responses to the procedure, because in infants there is no single method to identify pain," Porter notes. "In older populations, pain is assessed primarily by self-report. We tell our physician that we have pain, how it feels, its intensity and duration. Babies cannot do that."

This study reports physiological changes in heart rate and respiratory rate, both of which are known to show change in response to pain in older populations. The researchers also monitored oxygen and carbon dioxide levels in the blood, which can be affected by stress.

Prior to the procedure, the infants were monitored undisturbed in their nursery beds for 10 minutes. During the preparation phase, the babies were turned onto their sides into a fetal position so their backs could be sterilized at the site of the lumbar puncture. The infants were then flexed and held



Fran L. Porter, Ph.D., assistant professor of pediatrics at the School of Medicine, says routine care of small, sick infants may need to be re-evaluated.

firmly so the needle could be safely inserted into the back. They remained in the flexed position during the actual lumbar puncture, which took from 11 to 13 minutes. On removal of the needle, the infants were returned to their original position in their bed and observed for another five to six minutes during recovery.

Just prior to insertion of the lumbar puncture needle, 38 infants received an injection of lidocaine, which was expected to minimize their physiological response to the puncture, as it does in adults. But instead of making the pain more bearable, researchers learned lidocaine did little to stabilize the responses of such small infants.

"There were no differences between the control group and the anesthetized babies on any physiological measures while receiving the lumbar puncture," Porter notes. "We expected the anesthetized babies would show greater physiological stability during a lumbar puncture than those without the anesthesia. What we found with all of the babies in the study was that the change from baseline to the preparation period was very dramatic, with significant increases in heart rates and decreases in breathing rates. But during the lumbar puncture, which we considered to be the painful procedure, their heart rates actually slowed down from where they had been."

When the babies were flexed, their heart rate increased an average of 13 beats per minute. In addition, their respiration and oxygen levels decreased significantly. During the lumbar puncture, their heart rates dropped eight beats per minute, returning towards baseline and there was no further change in respiration. "If anything, it looked like they were calming down," she says. "With respect to heart rate and respiration, the lumbar puncture did not elicit a dramatic response. However, the blood oxygen levels continued to decrease during the lumbar puncture."

Preparation Period Stressful

Porter believes stress, resulting from the flexed position the infants were in for the procedure, may explain the dramatic responses during preparation.

"Flexing the baby exposes the spine

so the spaces between vertebrae are as wide as they can be," she says. "The baby is maintained in this position throughout the preparation period and the lumbar puncture. This necessary flexed position may cause changes in the baby's airway, or, if that's not the case, just being held firmly or being restrained may be stressful to the babies."

Research in animals shows that immobilizing and restraining them can blunt their response to subsequent pain. Porter suspects this theory may also apply to small infants, and that the restraint procedure may have caused a stress reaction that may have released natural beta endorphins, which mediate pain perception in the brain.

Porter's work continues and her ultimate goal, she says, is to develop a multi-dimensional index of pain that would provide both subjective and objective indications of changes that occur. In devising such a tool, Porter says it would be possible to detect the presence of pain, determine its impact on the baby and whether it calls for pain relief intervention. She currently is conducting research that incorporates crying, facial expressions and movement, along with physiological responses to painful procedures in infants.

Unexpected Findings May Bring Changes

Meanwhile, results of this study indicate that the issue of handling and positioning in small, sick infants appears to have more dramatic effects than previously noted. Porter says clinicians, nurses and others who care for these babies can become more aware of the potential effects of what have been considered harmless procedures.

"I'm not suggesting the preparation procedure the babies went through was necessarily painful, but it may elicit responses similar to those elicited by what we think of as painful," she says. "If this is the case, it may make more sense to give infants a sedative prior to preparing them for a lumbar puncture, or to position them as comfortably as possible before the procedure. There are many things we can do to eliminate some of the effects that we found in this study."



Jessica DuMaine, left, research assistant at Central Institute for the Deaf, explains the use of a tactile aid to Eugene Jordan, right, president of the CID board of managers. A tactile aid is a device that can help hearing impaired individuals distinguish speech sounds by emitting different vibrations on the skin. The display was part of an open house CID held in November.

CID holds open house

St. Louis community leaders recently got a hands-on opportunity to observe Central Institute for the Deaf at work.

CID, part of the Washington University Medical Center, held a reception in November to acquaint the community with its world-renowned research. The event,

called Central Institute on Display, featured 12 different interactive educational booths that enabled visitors to do everything from test their lipreading skills to measure the sound levels produced by a personal stereo.

More than 100 community leaders attended the event.

PERSONNEL NEWS

Americans with disabilities act: questions and answers

The Office of Human Resources has supplied the following information about the American Disabilities Act (ADA) from the Civil Rights Division:

Question: What employers are covered by the ADA, and when is the coverage effective?

Answer: The employment provisions apply to private employers, state and local governments, employment agencies, and labor unions. Employers with 25 or more employees will be covered starting July 26, 1992, when the employment provisions go into effect. Employers with 15 or more employees will be covered two years later, beginning July 26, 1994.

Question: What practices and activities are covered by the employment nondiscrimination requirements?

Answer: The ADA prohibits discrimination in all employment practices, including job application procedures, hiring, firing, advancement, compensation, training, and other terms, conditions, and privileges of employment. It applies to recruitment, advertising, tenure, layoff, leave, fringe benefits, and all other employment-related activities.

Question: Who is protected against employment discrimination?

Answer: Employment discrimination is prohibited against "qualified individuals with disabilities." Persons discriminated against because they have a known association or relationship with a disabled individual also are protected. The ADA defines an "individual with a disability" as a person who has a physical or mental impairment that substantially limits one or more major life activities, record of such an impairment, or is regarded as having such as impairment.

The first part of the definition makes clear that the ADA applies to persons who have substantial, as distinct from minor, impairments, and that these must be impairments that limit major life activities such as seeing, hearing, speaking, walking, breathing, performing manual tasks, learning, caring for oneself, and working. An individual with epilepsy, paralysis, a substantial hearing or visual impairment, mental retardation, or a learning disability would be covered, but an individual with a minor, nonchronic condition of short duration, such as a sprain, infection, or broken limb, generally would not be covered.

The second part of the definition would include, for example, a person with a history of cancer that is currently in remission or a person with a history of mental illness.

The third part of the definition protects individuals who are regarded and treated as though they have a substantially limiting disability, even though they may not have such an impairment. For example, this provision would protect a severely disfigured qualified individual from being denied employment because an employer feared the "negative reactions" of others.

Question: Who is a "qualified individual with a disability?"

Answer: A qualified individual with a disability is a person who meets legitimate skill, experience, education, or other requirements of an employment position that he or she holds or seeks, and who can perform the "essential functions" of the position with or without reasonable accommodation. Requiring the ability to perform "essential" functions assures that an individual will not be consid-

ered unqualified simply because of inability to perform marginal or incidental job functions. If the individual is qualified to perform essential job functions except for limitations caused by a disability, the employer must consider whether the individual could perform these functions with a reasonable accommodation. If a written job description has been prepared in advance of advertising or interviewing applicants for a job, this will be considered as evidence, although not necessarily conclusive evidence, of the essential functions of the job.

Question: Does an employer have to give preference to a qualified applicant with a disability over other applicants?

Answer: No. An employer is free to select the most qualified applicant available and to make decisions based on reasons unrelated to the existence or consequence of a disability. For example, if two persons apply for a job opening as a typist, one a person with a disability who accurately types 50 words per minute, the other a person without a disability who accurately types 75 words per minute, the employer may hire the applicant with the higher typing speed, if typing speed is needed for successful performance of the job.

Question: What is "reasonable accommodation?"

Answer: Reasonable accommodation is any modification or adjustment to a job or the work environment that will enable a qualified applicant or employee with a disability to perform essential job functions. Reasonable accommodation also includes adjustments to assure that a qualified individual with a disability has the same rights and privileges in employment as non-disabled employees.

Question: What kinds of actions are required to reasonably accommodate applicants and employees?

Answer: Examples of reasonable accommodation include making existing facilities used by employees readily accessible to and usable by an individual with a disability; restructuring a job; modifying work schedules; acquiring or modifying equipment; providing qualified readers or interpreters; or appropriately modifying examinations, training, or other programs. Reasonable accommodation also may include reassigning a current employee to a vacant position for which the individual is qualified, if the person becomes disabled and is unable to do the original job. However, there is no obligation to find a position for an applicant who is not qualified for the position sought. Employers are not required to lower quality or quantity standards in order to make an accommodation, nor are they obligated to provide personal use items such as glasses or hearing aids.

The decision as to the appropriate accommodation must be based on the particular facts of each case. In selecting the particular type of reasonable accommodation to provide, the principal test is that of effectiveness, i.e., whether the accommodation will enable the person with a disability to do the job in question.

Question: Must employers be familiar with the many diverse types of disabilities to know whether or how to make a reasonable accommodation?

Answer: No. An employer is only required to accommodate a "known" disability of a qualified applicant or employee. The requirement generally will be triggered by a request from an individual with a disability, who

frequently can suggest an appropriate accommodation. Accommodations must be made on an individual basis, because the nature and extent of a disabling condition and the requirements of the job will vary in each case. If the individual does not request an accommodation, the employer is not obligated to provide one. If a disabled person requests, but cannot suggest, an appropriate accommodation, the employer and the individual should work together to identify one. There are also many public and private resources that can provide assistance without cost.

Question: What are the limitations on the obligation to make a reasonable accommodation?

Answer: The disabled individual requiring the accommodation must be otherwise qualified, and the disability must be known to the employer. In addition, an employer is not required to make an accommodation if it would impose an "undue hardship" on the operation of the employer's business. "Undue hardship" is defined as "an action requiring significant difficulty or expense" when considered in light of a number of factors. These factors include the nature and cost of the accommodation in relation to the size, resources, nature, and structure of the employer's operation. Where the facility making the accommodation is part of a larger entity, the structure and overall resources of the larger organization would be considered, as well as the financial and administrative relationship of the facility to the larger organization. In general, a larger employer would be expected to make accommodations requiring greater effort or expense than would be required of a smaller employer.

Question: Must an employer modify existing facilities to make them accessible?

Challenge issued for 100 neediest cases

The Office of Human Resources issues a challenge to all departments on the Hilltop Campus, Medical Campus and at the Administrative Service Center to participate in the 100 Neediest Cases project sponsored by the St. Louis Post-Dispatch. The Office of Human Resources will pool the amount normally spent for departmental gift giving and

Answer: An employer may be required to modify facilities to enable an individual to perform essential job functions and to have equal opportunity to participate in other employment-related activities. For example, if an employee lounge is located in a place inaccessible to a person using a wheelchair, the lounge might be modified or relocated or comparable facilities might be provided in a location that would enable the individual to take a break with co-workers.

Question: May an employer inquire as to whether a prospective employee is disabled?

Answer: An employer may not make a pre-employment inquiry on an application form or in an interview as to whether, or to what extent, an individual is disabled. The employer may ask a job applicant whether he or she can perform particular job functions. If the applicant has a disability known to the employer, the employer may ask how he or she can perform job functions that the employee considers difficult or impossible to perform because of the disability, and whether an accommodation would be needed. A job offer may be conditioned on the results of a medical examination, provided that the examination is required for all entering employees in the same job category regardless of disability, and that information obtained is handled according to confidentiality requirements specified in the act. After an employee enters on duty, all medical examinations and inquiries must be job related and necessary for the conduct of the employer's business. These provisions of the law are intended to prevent the employer from basing hiring and employment decisions on unfounded assumptions about the effects of a disability.

other festivities to make the departmental contribution to the 100 Neediest Cases. Departments interested in meeting this challenge are invited to inform Gloria W. White, vice chancellor for human resources, at 935-5990 or by Box 1184. Participating departments will be acknowledged through the Community Service Honor Roll.

Day care information available

Finding reliable and adequate care for children while parents are at work is sometimes difficult and often a concern. With this in mind, the Nonacademic Personnel Advisory Committee, with the assistance of the Office of Human Resources compiled information on a variety of resources available to Washington University employees.

One option is the Child Day Care Association of St. Louis (CDCA), a United Way agency established for the purpose of planning, developing and coordinating day-care programs in the metropolitan St. Louis area. It provides information and referrals to help parents locate and select appropriate day care programs.

The University will reimburse employees who choose to use the services of CDCA. Interested employees should contact the human resources office to make reimbursement arrangements prior to contacting CDCA.

Parents who prefer to use University-affiliated day care can obtain

Children's Hospital Day Care Center brochures and contact information from the Office of Human Resources. The center is located midway between the Medical Campus and the Hilltop Campus. For more information, call 533-6737.

Also available is a brochure that contains information about the 20 largest St. Louis day care centers. Updated annually by the St. Louis Business Journal, this chart is one of the most accurate references available on local day care centers.

Additional information on day care resources may be found in Sorkin's Directory of St. Louis Businesses and the United Way Directory.

Personnel News

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

CALENDAR

Dec. 5-14

LECTURES

Thursday, Dec. 5

Noon. Dept. of Genetics Seminar, "Virulence and Phenotypic Variation of *Histoplasma Capsulatum*," Bill Goldman, WU Dept. of Molecular Microbiology. Room 816 McDonnell Medical Sciences Bldg.

12:10 p.m. Gallery Talk with Barry Schactman, WU prof. of fine arts. Steinberg Hall Aud.

2 p.m. Immunology Thesis Defense Seminar, "Tissue and Cell-Specific Regulation of Interleukins 2, 4, and 6 in Humans," Heather Secrist, WU Dept. of Medicine. Room 7738 Clinical Sciences Research Bldg., 4939 Audubon Ave.

2:30 p.m. Mechanical Engineering Seminar, "Dynamic Response of Cracked Bars, Beams and Shafts," Jonathan Yi Yao, WU doctoral candidate. Room 100 Cupples II.

3:30 p.m. Center for the Study of Islamic Societies and Civilizations and the Dept. of History Present a Colloquium on "Law and Society: Historical Perspectives," titled "A Society Without Lawyers: The Effort to Ban the Legal Profession in Colonial Virginia," Gordon Hylton, visiting prof., School of Law. Room 113 Busch Hall.

4 p.m. Dept. of Earth and Planetary Sciences Charles W. Buescher Memorial Colloquium, "Mountain Building on Earth and Its Role in Continental Evolution," Kevin Burke, scholar in residence, National Research Council. Room 102 Wilson Hall.

4 p.m. Dept. of Chemistry Seminar, "Synthesis of Organic Molecules Using Transition Metal Chemistry," Lanny Liebeskind, Emory U. Room 311 McMillen.

4 p.m. Central Institute for the Deaf Research Seminar, "Project Zeus: A Broad-band Network for Multimedia Communication on a University Campus," Jerome R. Cox Jr., director, Applied Research Laboratory, WU Dept. of Computer Science. Second Floor Aud., Clinics and Research Bldg., 909 S. Taylor Ave.

4 p.m. Divisional Neuroscience Seminar, "Neuromodulation of Thalamocortical Activity," David McCormick, Dept. of Neuroanatomy, Yale U. School of Medicine. Cori Aud., 660 S. Euclid Ave.

4:30 p.m. Dept. of Mathematics Colloquium with Andrei Suslin, U. of Chicago. Room 199 Cupples I.

Friday, Dec. 6

9:15 a.m. Pediatric Grand Rounds, "Current Status of Pediatric Lung Transplantation," Thomas L. Spray, WU assoc. prof. of cardiothoracic surgery; surgeon-in-chief, Pediatric Cardiothoracic Surgery; and medical director, Extracorporeal Membrane Oxygenation Service, St. Louis Children's Hospital. Clopton Aud., 4950 Audubon Ave.

Noon. Dept. of Cell Biology and Physiology Seminar, "Calcium Channel Gating in Excitable Cells," Aaron Fox, U. of Chicago. Room 423 McDonnell Medical Sciences Bldg.

6 and 8:30 p.m. WU Association Travel Lecture Series Presents "The People of Portugal," Frank Reidelberger. Graham Chapel. Cost: \$4.50 for single ticket at the door. For more info., call 935-5212.

Saturday, Dec. 7

9 a.m. Saturday Morning Neural Science Seminar, "Neurobiology of Stroke: What Can We Learn From the Heart?" Dana Abendschein and Steve Bergmann, WU Dept. of Internal Medicine. Erlanger Aud., McDonnell Medical Sciences Bldg.

Monday, Dec. 9

Noon. Special Neuroscience Seminar, "Multiple Mechanisms of Growth Cone Guidance in Zebra Fish Embryos," John Kuwda, Dept. of Biology, U. of Michigan. Room 816 McDonnell Medical Sciences Bldg.

2 p.m. Dept. of Chemical Engineering Seminar, "New Applications of BEM in Fluid Flow," Carlos A. Brebbia, prof., Wessex Institute of Technology, Ashurst, Southampton, England. Room 100 Cupples II.

4 p.m. Immunology Seminar, "Structure and Function of Receptors for Hemopoietic Growth Factors, GM-CSF, IL-3, and IL-5," Atsushi Miyajima, senior staff scientist, DNAX Research Institute of Molecular and Cellular Biology, Palo Alto, Calif. Third Floor Aud., Children's Hospital, 400 S. Kingshighway.

4 p.m. Dept. of Biology Departmental Seminar, "Evolution of the Transposable Element Mariner in *Drosophila*," Daniel Hartl, WU prof. of genetics. Room 322 Rebstock Hall.

6 p.m. Mallinckrodt Institute of Radiology Lecture, "Degenerative Disk Disease and Low Back Pain," Michael T. Modic, chair, Division of Radiology, Cleveland Clinic Foundation, Ohio. Scarpellino Aud., 510 S. Kingshighway Blvd.

Tuesday, Dec. 10

4 p.m. Dept. of Chemistry Seminar, "Self-Assembling Drugs," Darryl Ridout, Research Institute of Scripps Clinic. Room 311 McMillen.

4:30 p.m. Divisional Cell and Molecular Biology Student Sponsored Seminar, "Organizing the Cytoskeleton in Yeast and Animal Cells," Frank Solomon, Dept. of Biology, MIT. Erlanger Aud., McDonnell Medical Sciences Bldg.

Wednesday, Dec. 11

Noon. Neuroscience Luncheon Seminar, "Structure and Function of the Human Substance P Receptor," Yasuo Takeda, WU Dept. of Anatomy and Neurobiology. Room 928 McDonnell Medical Sciences Bldg.

2 p.m. Dept. of Biology Thesis Defense Seminar, "Genetic and Environmental Sources of Variation in Natural Populations of *Helianthus Tuberosus* L.," Charlotte Borchers Zampini, WU Evolution and Population Biology Program. Room 322 Rebstock Hall.

4 p.m. Dept. of Plant Biology Seminar, "Rice Regeneration," Thomas Hodges, Botany and Plant Dept., Purdue U. Room 309 Rebstock Hall.

4 p.m. Dept. of Biochemistry and Molecular Biophysics Seminar, "Mechanisms of DNA Mismatch Correction," Paul L. Modrich, Dept. of Biochemistry, Duke U. Medical Center, Durham, N.C. Cori Aud., 660 S. Euclid Ave.

Thursday, Dec. 12

4 p.m. Dept. of Hematology and Oncology Presents The Nineteenth Annual Carl Vernon Moore Memorial Lecture, "Genetic Alterations Underlying Colorectal Tumorigenesis," Bert Vogelstein, prof. of oncology, The Johns Hopkins U. School of Medicine. Moore Aud., North Bldg., 4580 Scott Ave.

4:30 Dept. of Mathematics Colloquium, "Wavelets," Guido Weiss, WU prof. of mathematics. Room 199 Cupples I.

5 p.m. Division Research Discussion for Students Seminar Series, "Investigating Protein, Structure and Function by NMR: Basic Principles and Strategies," David Cistola, WU Dept. of Biochemistry and Molecular Biophysics. Room 423 McDonnell Medical Sciences Bldg.

Friday, Dec. 13

9:15 a.m. Pediatric Grand Rounds, "American Medical Education: Past, Present, and Future," Kenneth Ludmerer, WU assoc. prof. of medicine and history. Clopton Aud., 4950 Audubon Ave.

4 p.m. Dept. of Hematology Oncology Seminar, "Gene Therapy for Serum Protein Deficiencies," Kathy Parker-Ponder, WU Dept. of Biochemistry and Medicine. Room 8841 Clinical Sciences Research Bldg., 4939 Audubon Ave.

Saturday, Dec. 14

9 a.m. Saturday Morning Neural Science Seminar, "Neurobiology of Stroke: Prospects for Stroke Therapy," Dennis Choi, WU Dept. of Neurology. Erlanger Aud., McDonnell Medical Sciences Bldg.

PERFORMANCES

Thursday, Dec. 5

8 p.m. Performing Arts Dept. Presents "Family Affairs: An Evening of One Acts," featuring "Haiku" and "Coyote Ugly." (Also Dec. 6 and 7, same time, and Dec. 8 at 2 p.m. and 7 p.m.) Mallinckrodt Center Drama Studio, Room 208. Cost: \$7 for the general public; \$5 for senior citizens, students and WU faculty and staff. For more info., call 935-6543.

Wednesday, Dec. 11

8 p.m. Dept. of Music Presents "Mozart Scenes II," performed by Jolly and John Stewart, directors of the WU Opera Workshop. Women's Bldg. Lounge. Free. For more info., call 935-5581.

MUSIC

Friday, Dec. 6

8 p.m. Dept. of Music Vocal Jazz Ensemble Concert, featuring Kim Portnoy Trio. Steinberg Hall Aud. Free.

Saturday, Dec. 7

8 p.m. Dept. of Music Presents the Chamber Choir. Graham Chapel. Free.

Sunday, Dec. 8

7 p.m. Spiritual Friendship Ministries Presents the Second Annual Carols of Christmas Gospel Music Workshop and Concert. Graham Chapel. Cost: \$5 for the general public; \$2 for WU students. For more info., call 935-2558.

Monday, Dec. 9

8 p.m. Dept. of Music Presents "String Chamber Music Concert — Chamber Ensembles of WU." Steinberg Hall Aud. Free.

Tuesday, Dec. 10

8 p.m. Dept. of Music Mixed Choir Concert. Graham Chapel. Free.

Sunday, Dec. 15

7:30 p.m. Dept. of Music 30th Anniversary Celebration Concert, featuring the University City Symphony. Graham Chapel. Cost: \$5 for the general public; \$3 for students and senior citizens. For more info., call 994-1760.

EXHIBITIONS

"Washington University Art Collections."

Through May 1992. Gallery of Art, lower gallery, Steinberg Hall. Exhibit hours: 10 a.m.-5 p.m. weekdays; 1-5 p.m. weekends. For more info., call 935-5490.

"A Continuous Between: The Poetry of Donald Finkel." Through Jan. 3. Special Collections, Olin Library, Level 5. Exhibit hours: 8:30 a.m.-5 p.m. weekdays. For more info., call 935-5495.

"The Binding Influence: A Celebration of the Medical School Centennial." Through Dec. 27. Glaser Gallery, School of Medicine Library. Exhibit hours: 8:30 a.m.-10 p.m. weekdays. For more info., call 362-4239.

"Arthur Osver Exhibition." Exhibit continues through Dec. 7. Randall Gallery, 999 N. 13th Street. For more info., call 231-4808.

"Barry Schactman Exhibition." Through Jan. 12. Gallery of Art, upper gallery, Steinberg Hall. Exhibit hours: 10 a.m.-5 p.m. weekdays; 1-5 p.m. weekends. For more info., call 935-5490.

FILMS

Thursday, Dec. 5

7 and 9:30 p.m. Filmboard Foreign Series Presents "Floating Weeds," a Japanese film with English subtitles. Room 100 Brown Hall. \$3. **For 24-hour Filmboard hotline, call 935-5983.**

Friday, Dec. 6

7 and 9:30 p.m. Filmboard Feature Series Presents "Willy Wonka and the Chocolate Factory." (Also Dec. 7 at 7 p.m. and 9:30 p.m., and Dec. 8 at 7 p.m.) Room 100 Brown Hall. \$3.

7:30 p.m. Dept. of Romance Languages and Literatures Presents "Sedotta e abbandonata," an Italian film with English subtitles. Room 219 Ridgley Hall. Free.

Mozart opera scenes to be performed

Scenes from Mozart's operas "The Marriage of Figaro" and "Cosi fan Tutte" will be performed at 8 p.m. Wednesday, Dec. 11, in the Women's Building Lounge, when the University's Opera Workshop presents "Mozart Scenes II."

Fully-staged versions of Act I and the letter duet from "The Marriage of Figaro" and two short scenes from "Cosi fan Tutte" will be presented, complete with costumes, scenery and theatrical lighting. The Opera Workshop staged a similar evening of Mozart scenes last December. In April, they will perform two one-act operas in the Sheldon Ballroom, 3648 Washington Ave.

Vocal music instructor Jolly Stewart leads the Opera Workshop, now in its second year. Stewart is a soprano who

Gospel choir will sing Christmas music

The second annual Carols of Christmas Gospel Music Workshop and Concert will be held at 7 p.m. Sunday, Dec. 8, in Graham Chapel. The concert is sponsored by Spiritual Friendship Ministries, a Washington University student organization, and several other University groups.

The 200-voice Carols of Christmas Gospel Choir, under the direction of guest conductor Richard Smallwood, will be featured at the concert. The choir will perform original Christmas arrangements and contemporary gospel music from the Richard Smallwood Singers' albums. Members of the audience will have an opportunity to sing in the choir.

Smallwood is an internationally acclaimed gospel pianist, singer and

Midnight. Filmboard Midnight Series

Presents "The Hobbit." (Also Dec. 7, same time, and Dec. 8 at 9:30 p.m.) Room 100 Brown Hall. \$3. On Fri. and Sat., both the 9:30 p.m. and midnight films can be seen for a double feature price of \$4; both Sunday films can be seen for \$4.

SPORTS

Friday, Dec. 6

6 p.m. Men's Basketball. Eighth Annual Lopata Classic First Semifinal Game. (WU, MIT, Pomona-Pitzer, and Washington and Lee.) Second semifinal game begins at 8 p.m. Field House. Free.

Saturday, Dec. 7

6 p.m. Men's Basketball. Eighth Annual Lopata Classic Consolation Game. (Championship game begins at 8 p.m.) Field House. Free.

Wednesday, Dec. 11

7:30 p.m. Women's Basketball. WU vs. Maryville College. Field House. Free.

Saturday, Dec. 14

7:30 p.m. Women's Basketball. WU vs. U. of Missouri-St. Louis. Field House. Free.

MISCELLANY

Friday, Dec. 6

Noon. Woman's Club Mini-Luncheon. Women's Bldg. Lounge. Cost: \$3 for members; \$4 for guests. For more info., call 721-3573.

Friday, Dec. 13

Noon-9 p.m. Dept. of Music and Staufen's Music House Sponsored Piano Sale. (Also Dec. 14, 10 a.m.-9 p.m., and Dec. 15, 11 a.m.-6 p.m.) Former Boyd's store, 7511 Forsyth, Clayton. For more info., call 394-5050.

Calendar Deadline

The deadline to submit items for the Dec. 12-Jan. 18 calendar of the Record is Dec. 6. Items must be typed and state time, date, place, nature of event, sponsor and admission cost. Incomplete items will not be printed. If available, include speaker's name and identification and the title of the event; also include your name and telephone number. Send items to Marilyn Chill, Box 1070, or by electronic mail to p72245CM at WUVMC.

has held leading roles with numerous opera companies, and has performed at festivals, recitals and concerts throughout the world. She received her bachelor's degree in music from Oberlin College, and master's degrees in voice, opera, lied, and concert singing from the Akademie Mozarteum in Salzburg.

Stewart's husband, John Stewart, a noted tenor and an associate professor of music at the University, also works with the group. Workshop participants include seven candidates for the master of music in voice degree, along with graduate students in musicology and chemistry, and two undergraduates.

The free event is sponsored by the Department of Music. For more information, call 935-5581.

songwriter. He started the first gospel group to appear in Montreux, Switzerland, and has recorded five best-selling albums with his group, the Richard Smallwood Singers. Smallwood, a five-time Grammy Award nominee, is best known for recording the song "Jesus, You're the Center of My Joy," which he co-wrote with Bill and Gloria Gaither.

Tickets for the concert, which are being sold at local gospel music stores, are \$2 for Washington University students and \$5 for the general public.

For more information, call 935-2558 or 361-1782.