IRS Proposes Tax
On Tuition Benefits
Of University Employes

The Internal Revenue Service has proposed a regulation that would make tuition benefits afforded to WU employes' spouses and children subject to income tax.

According to the IRS proposal, the regulation would go into effect in early 1977 and would primarily affect the 1977-78 academic year, if Congress should pass it. Interested parties are being given until Dec. 17 to file comments and responses to the proposed regulation. A public hearing will be held after that date.

Peter H. Ruger, general counsel for WU, said he would file a response for WU and may present testimony at the hearing.

"The new regulations would have an adverse impact on private universities," Ruger said. He surmised that private universities and colleges could be hurt in recruiting employes.

"Private universities can't offer salaries commensurate with government, business or even with public universities. Free tuition is an incentive for many persons to teach or work at a private school.

"The current policy provides the opportunity for many staff and maintenance workers' children to attend WU," Ruger said. "If the tuition benefits are deemed compensation to these workers, the resulting tax burden could prevent these employes' children from attending here."

At the present, WU has 293 employes—faculty, administration and staff with at least five years of service (the minimum number of years' service required to qualify for the tuition remission benefit)—who are sending 327 children or spouses to the University under the existing tuition remission program. The 327 figure also includes faculty children who are attending other schools as part of a reciprocal tuition agreement. In these instances, WU pays one-half of the tuition.

Ruger believes the IRS regulation

(Continued on page 3)
Physicist Works With Cardiologists; Teaches ‘Physics of the Heart’

Despite the fact that on this campus we witness the ever-increasing cross-fertilization between scholars as disparate as art conservationists and chemists, it is, nonetheless, a jolt to discover physicists and cardiologists sharing laboratory space both at the WU School of Medicine and in Compton Hall on the Hilltop.

This team effort, which has resulted in the active collaboration of Professor James G. Miller, Associate Director for Biomedical Physics of the Laboratory for Ultrasonics in the Physics Department, and his research group, with the Division of Cardiology in the School of Medicine headed by Burton E. Sobel, M.D., is supported by three grants from the National Institutes of Health (NIH). (Miller was also recently named Research Assistant Professor of Medicine.)

Research funded by the largest of these grants, which provided the monetary resources for the establishment of a Specialized Center of Research (SCOR) for the Study of Ischemic Heart Disease, involves intensive cooperation among cardiologists and a wide range of basic scientists, including physicists, physiologists, pharmacologists, and biochemists, among others. (Ischemic heart disease can be defined in a medical sense as a condition in which there is an inadequate flow of blood to the heart muscle.) As a part of the SCOR team, Miller and his researchers are focusing their attention, on what he explained, “is the use of ultrasound to assess quantitatively the amount of tissue damage caused by a heart attack.”

With an $88,000 NIH grant, Miller serves as principal investigator of a special effort entitled “Detection of Myocardial Injury with Ultrasound.” This research is focused on using ultrasound (ultra high frequency sound waves) not only to picture the region of the heart damaged during an attack, but also to identify the precise nature and amount of tissue killed during a myocardial infarction. Such a procedure, it is hoped, will ultimately play a role in helping physicians to minimize the damage of a heart attack by protecting jeopardized tissue with effective drug treatment, and to provide a better understanding of the fundamental physical processes that accompany infarction.

Discussing these physics-cardiology research projects, Miller observed: “This collaborative effort emphasizes dramatically how much a knowledge of basic physics can influence in a positive way the understanding of some of the most exciting events in the forefront of cardiology research today.”

The realization that such an effort demonstrated first-hand the relevance of physics to current problems of biomedical research prompted Miller to want to share his experience with WU students. The result was the establishment of an innovative course “The Physics of the Heart” first offered on the Hilltop last spring. Scheduled to be repeated again this coming spring, “Physics of the Heart” is open to anyone who has completed the general physics course.

“It’s exciting for the students and a lot more fun for them to be able to understand how very abstract physical concepts can be demonstrated by studying the heart and its operation. It also makes more sense to them when, in the course of a lecture I can say: ‘Let’s take a heart, and then let’s see how a physical law controls the amount of blood flow to the left anterior descending coronary artery.’

“That’s exactly what I did when we studied the physics of fluid flow in arteries. I related the physics to a specific clinical setting. When we discussed turbulent versus laminar flow, I was able, with the help of Richard Schmaeng, our lecture-demonstration technician in the Physics Department, to simulate an artery with glass tubes. We showed how the blood flow was laminar (smooth and even) in the artery until it passed through a narrowed region. Then it became abnormally swift resulting in turbulence replete with whirlpools. We showed closeups of all of this action on closed-circuit television.

“Once the students come to understand turbulence and what is known in physics as the Reynolds number, all of the physical laws applicable to the clinical condition described as a heart murmur became easier to understand,” Miller said.

Miller uses all kinds of audio-visual techniques, many of them depicting cardiovascular techniques, as teaching aids. Next semester, he also plans to invite James W. Mimbns, M.D., St. Louis Heart Association Research Instructor in Medicine, who conducted research in Miller’s ultrasound laboratory this past year, to lecture from time to time. Mimbns’s and Miller’s collaborative work is supported in part by funds from an $800,000 Multi-Disciplinary Heart and Vascular Disease grant. This appropriation, which is usually referred to as a training grant, makes it possible for researchers in the cardiovascular field to work in a laboratory of a scientist whose basic program is focused in that direction. Matthew O’Donnell, Ph.D., a physicist in cardiovascular research, is the current recipient of such an award.

In appraising the physics-cardiovascular project as a whole, and his “Physics of the Heart” course specifically, Miller pointed out that the foundations for such interdisciplinary cooperation were actually foreseen a century ago. Alan C. Burton, author of the textbook, Physiology and Biophysics of the Circulation, which Miller uses in his course, was careful to explain in his preface that “one of the Fathers of Biophysics, Ludwig von Helmholtz, considered that the behavior of living things was as much in the province of a Physicist as were the phenomena of the nonliving world.”

(Richard N. Levine)
Neurology (Continued from page 1)

States at various posts, including the Army Medical School in Washington, D.C., and overseas with the 79th Division in France. Following this military service, he came to the WU Medical Center where he took graduate training in medicine and neurology at Barnes Hospital.

Jones joined the WU Medical School faculty in 1922 and taught neurology and psychiatry there until his retirement in 1965. Not long after he began practicing medicine, he became interested in encephalitis (sleeping sickness). During the 1930’s, Jones made a special study of an encephalitis outbreak in St. Louis, and published several articles on it. He was chief of the encephalitis service at Barnes Hospital during World War II. He also served during the Second World War as psychiatric consultant to the Selective Service Agency of Eastern Missouri.

Jones was on the staff of St. Luke’s Hospital where he served from 1933, first, as an active and then as a consulting neuropathologist until he became an honorary staff member at the time of his retirement. He also held staff appointments at Missouri Baptist, Deaconess and Jewish Hospitals, among others.

He was associated with numerous professional organizations during his career including the American Psychiatric Association and the American Academy of Neurology.

Jones and his wife, the former Gretchen Pemberton, now reside near Chattanooga, Tenn.

The SENIOR STUDENTS ASSOCIATION, a newly-formed student group, began the first of several fund-raising efforts Nov. 29 by selling a booklet of nearly 200 “two-for-one” coupons for St. Louis restaurants, movie theatres, sports events, and for 19 hotels in the United States and abroad. The committee intends to use the proceeds to sponsor several senior class activities next spring, among them, a Senior Prom and a picnic at Grant’s Farm. All seniors may participate on the committee. Suggestions for activities and fund-raising ideas may be sent to box 1128. The committee’s next meeting will be Wednesday, Dec. 8, at 6:15 p.m., in the Women’s Bldg. Lounge. It is open to all seniors.

The WU Record is published weekly during the academic year by the Information Office. Editor, Janet Kelley; calendar editor, Charlotte Boman. Address communications to Box 1142.

The Seaboard Airline Passenger Station in West Palm Beach, Fla., is one of the terminals featured in the exhibit, “Terminal, Stations and Depot,” at Givens Hall through Dec. 10.

THE VERY INTERESTING WOMEN LECTURE SERIES will be evaluated at a meeting Thursday, Dec. 9, at noon, in the Women’s Bldg. Lounge. Plans for next semester’s series will also be considered. All students are invited.

APPLICATIONS for NATO Advanced Research Fellowships are now being accepted. The deadline is January 3, 1977. Applicants must be nationals of a NATO country and must undertake a research project in one or more member countries. For further information, call or write Ann Peterson, ext. 4943, box 1088.

IRS (Continued from page 1)

also would apply to employees of private secondary schools and even private elementary schools. “The crackdown on education is part of a wider government scrutiny of all kinds of tax-free fringe benefits extended by businesses and corporations,” he said.

Although he recognized that educational institutions had come under increased audit activity in the last few years, Ruger questioned the timing and appropriateness of the announcement of this regulation since the IRS has not yet issued its final regulations applicable to all fringe benefits. “Moreover,” he said, “since major tax reform occurred in 1976, I think it will be very difficult to get Congress to pass legislation in 1977 that would allow the IRS to tax tuition remissions.”

Ruger predicted an adverse reaction to the IRS regulation by the American Council on Education, the American Association of University Professors and the National Association of College and University Business Officers.

Technology and Human Affairs Sponsors National Conference

Representatives from nearly all of this country’s colleges and universities with major engineering-based technology policy programs will gather Dec. 8-10 at the Colony Hotel, 7730 Bonhomme Ave., for a special conference on “University Education for Technology and Public Policy.” The two-day meeting is sponsored by WU’s newly established Department of Technology and Human Affairs. WU participants will include: Chancellor William H. Danforth, James M. McKelvey, Dean of the School of Engineering and Applied Science; Robert P. Morgan, Chairman of the Department of Technology and Human Affairs; Christopher T. Hill, associate professor of technology and human affairs and of chemical engineering; and George E. Pake, a trustee and vice president for Research and Development, Xerox Corporation. Among the other speakers will be the Honorable R. David Pitte, U.S. Commissioner, Consumer Product Safety Commission, who will talk on “Big Government, Safety and Health,” at the Friday, Dec. 10 luncheon.

THE UMRATHSKELLER is taking reservations for office Christmas parties. For further information call Mrs. Angeline Herr, ext. 4637.

Chancellor William H. Danforth addresses members of the WU community and the family of the late Carl Dauten, WU Executive Vice Chancellor who died on Sept. 17, at a ceremony held Nov. 22 to dedicate Dormitory K on the South Forty in honor of Dauten. A portrait of Dauten by St. Louis portrait artist Gilbert Early, a graduate of WU and a former instructor, was commissioned by the University to hang in the Conference Room of North Brookings. Two studies for the portrait were presented to Mrs. Dauten.
FRIDAY, DECEMBER 3
12 noon. Woman's Club Luncheon, Howard Kelsey, University Organist, will speak about and demonstrate European clock tunes. Le Chateau Restaurant, 10405 Clayton Rd. Call Mrs. Pierre Honnell at 725-3201 for reservations.

SATURDAY, DECEMBER 4
8 p.m. COSMO Student Party, Six National House.

SUNDAY, DECEMBER 5
6 p.m. COSMO and International Office Sunday Night Dinner, with a slide presentation on Sweden. Six National House. General admission $2.50; WU faculty/staff $2; WU students $1.50. Tickets available at the Edison Theatre box office. Admission will be an additional 50¢ at the door.

MONDAY, DECEMBER 6
11 a.m. Department of Civil Engineering Seminar, "Current National Transportation Policy in the United States," Gene R. Tandall, chief of the Policy Planning Div., U.S. Department of Transportation, 100 Cupples II.

1:30 p.m. Basic Cancer Research Center Symposium, " Molecular Events in Viral Carcinogenesis. " " Introduction to Papova Viruses," Dr. Lawrence Gelb, WU assn. prof. in medicine, microbiology and immunology. Co-sponsored by the Training Program in Molecular Virology, Erlanger Auditorium, McDonnell Medical Science Bldg., 4565 McKinley.

1:45 p.m. Basic Cancer Research Center Symposium, " Polyoma Gene Function and Cell Growth Regulation," Dr. Walter Eckhart, Salk Institute, San Diego, Calif. Erlanger Auditorium, McDonnell Medical Science Bldg.

2:30 p.m. Biomedical Engineering Program Colloquium, " Technology and Human Rehabilitation," Robert W. Mann, director, Harvard-MIT Rehabilitation Engineering Center, Boston, Mass. 100 Cupples II.

2:40 p.m. Basic Cancer Research Center Symposium, " SV40 T-Antigen: Its Role in Viral DNA Replication and in Virus-Induced Neoplastic Transformation," Dr. David Livingston, prof. of medicine, Harvard Medical School, Erlanger Auditorium, McDonnell Medical Science Bldg.


TUESDAY, DECEMBER 7


WEDNESDAY, DECEMBER 8

THURSDAY, DECEMBER 9
4 p.m. Department of Chemistry Seminar, " Peptides are in Season," Ralph F. Hirschmann, vice-president for basic research, Merck, Sharp and Dohme Pharmaceutical Co. 311 McMillen Lab.

4 p.m. Department of Earth and Planetary Sciences Seminar, " Inter-planetary Dust: A New Source of Primitive Solar Material," Donald Brownlee, prof. of astronomy, University of Washington, Seattle. 104 Wilson. The lecture will be preceded by coffee at 3:30 p.m.

MUSIC
SATURDAY, DECEMBER 4

SUNDAY, DECEMBER 5
4:30 p.m. Department of Music Organ Recital, Stephen McKersie, director of music, Second Presbyterian Church; and Paul Andersen, assoc. prof. of music, University of Southern Mississippi, Hattiesburg, soloists. Works by WU instructor of music Thomas Hamilton, among others. Christ Church Cathedral, 1210 Locust. Part of the Howard Kelsey organ concert series.

7:30 p.m. University City Symphony Concert, William Schutzkramer, conductor, with soloist Joanne Cruickshank, mezzo-soprano. Program will include works by Brahms and Rachmaninoff. Sponsored by the Missouri State Council on the Arts and the Music Performance Trust Fund. Graham Chapel.

TUESDAY, DECEMBER 7
8 p.m. Department of Music Graduate Vocal Conducting Recital, Steven Fraser, conductor. Graham Chapel.

EXHIBITIONS
"Comments on the State of Architecture," a series of unusual and whimsical collages depicting visiting prof. of architecture Niels Ole Lund’s impressions of American architecture. Lund is dean of the School of Architecture, University of Aarhus, Aarhus, Denmark. Steinberg Gallery, lower level, 9 a.m.-5 p.m. Mon.-Fri.; 10 a.m.-4 p.m. Sat.; 1 p.m.-5 p.m. Sun. Dec. 3-20.

"Faculty Show ‘76," an exhibit of works by WU School of Fine Arts faculty. Steinberg Gallery. 9 a.m.-5 p.m. Mon.-Fri.; 10 a.m.-4 p.m. Sat.; 1-5 p.m. Sun. Through Dec. 5.

"Terminal, Station and Depot," a collection of color and black and white photographs of early works in science fiction and fantastic art. Olin Library, level 5, 8:30 a.m.-5 p.m. Mon.-Fri. Through Dec. 31.

"Abstractions in Color on Natural Themes," a collection of color photographs by WU biology graduate student Peter Gegenheimer. Beaumont Lounge, Mallinckrodt Center. 9 a.m.-12 midnight, Sun.-Thurs. 9 a.m.-1 a.m. Fri. and Sat. Through Dec. 17.

"Noted Missourians, Past and Present," an exhibit of works and biographies of famous Missourians in art, literature, sports, performing arts and other fields. Olin Library, level 3, 8:30 a.m.-12 midnight, daily. Through Jan. 4.

PERFORMING ARTS
FRIDAY, DECEMBER 3
8 p.m. Performing Arts Area and Department of Music Production, "Fusion: A Dancemusicpainting," a multi-media piece. Presented by Jack Brown, Edison Theatre asst. technical director and instructor of drama; Bill Kohn, assoc. prof. of fine arts; Thomas Hamilton, instructor of music, Mary-Jean Cowell, artist-in-residence in performing arts and Peggy Berg, instructor of dance. Edison Theatre. Co-sponsored by the Fine Arts Council. Admission $1. (Also Sat., Dec. 4, and Sun., Dec. 5, 8 p.m., Edison.)

SATURDAY, DECEMBER 4
8 p.m. Black Studies Program Presentation, "An Ole Fashioned Cakewalk in B Flat," a series of word songs by Marcela Howell, WU instructor in Black Studies, and Patrice Williams, St. Louis poet. Mallinckrodt Center Drama Studio.

THURSDAY, DECEMBER 9
8 p.m. Thyrus Production, "The Frogs," by Aristophanes. Mallinckrodt Center Drama Studio. (Also Fri.-Sun., Dec. 10-12, 8 p.m. Mallinckrodt Drama Studio.)

FILMS
FRIDAY, DECEMBER 3
12 midnight. WU Filmboard Series, "Night Moves," directed by Arthur Penn. Brown Hall Theatre. Admission $1. (Also Sat., Dec. 4, midnight, Brown; and Sun., Dec. 5, 8 p.m., Wohl Center line D.)

SATURDAY, DECEMBER 4
8 p.m. Office of Campus Programming—Cinema of the Forties Series, "How Green Was My Valley," and "It’s a Wonderful Life." Wohl Center line D. Admission $1.

TUESDAY, DECEMBER 7
12 noon. Tuesday Noon Film Series, "Women’s Happy Times Commune." Sponsored by the Women’s Programming Board and the Office of Campus Programming. Women’s Bldg., lower level.

7:30 and 10 p.m. WU Filmboard Series, "The Lion in Winter." Brown Hall Theatre. Admission $1.

WEDNESDAY, DECEMBER 8

7:30 and 9:30 p.m. WU Filmboard Series, "Rashomon," directed by Akira Kurosawa. Japanese with subtitles. Brown Hall Theatre. Admission $1.25. (Also Thurs., Dec. 9, same times, Brown.)