

Washington University School of Medicine

Digital Commons@Becker

Washington University Record

Washington University Publications

9-11-1997

Washington University Record, September 11, 1997

Follow this and additional works at: <https://digitalcommons.wustl.edu/record>

Recommended Citation

Washington University Record, September 11, 1997. Bernard Becker Medical Library Archives.
<https://digitalcommons.wustl.edu/record/767>.

This Article is brought to you for free and open access by the Washington University Publications at Digital Commons@Becker. It has been accepted for inclusion in Washington University Record by an authorized administrator of Digital Commons@Becker. For more information, please contact vanam@wustl.edu.

MS SAMUELA
BOX NO. 8132
KOFFMAN



DAVID ALLEN

Touchdown!

Retired Sgt. Maj. Jim Grindstaff descends upon Francis Field Saturday, Sept. 6, prior to the Bears' season-opening 44-0 gridiron win over Rhodes College. Grindstaff landed at midfield and delivered the game ball as part of pregame festivities sponsored by Washington University's Army ROTC program.

Commission forms to examine Arts and Sciences curriculum

In an effort to better offer undergraduate students the knowledge and skills critical to a quality educational experience, a new commission designed to assess the Arts and Sciences undergraduate curriculum has taken its first steps.

Appointed last spring by Edward S. Macias, Ph.D., executive vice chancellor and dean of Arts and Sciences, the Commission on the Undergraduate Curriculum in Arts and Sciences will convene a series of sessions for faculty and students this fall. Participants will examine arts and sciences curricula at universities nationwide, exploring and analyzing the resulting issues in subsequent meetings.

"Although our level of teaching and advising is of the highest quality, we're not always clear as to how various aspects of our curriculum meet our educational goals," said John Bowen, Ph.D., professor of anthropology in Arts and Sciences and chair of the commission. "We plan to consult with Arts and Sciences faculty, students and alumni to arrive at recommendations that answer a basic question: What do we want our graduates to know and to have experienced in their four years with us?"

Serving on the commission are the following College of Arts and Sciences faculty: Nina Davis, Ph.D., associate professor of Spanish and chair of the Department of Romance Languages and Literatures; Willem Dickhoff, Ph.D., professor of physics; Steven Fazzari, Ph.D., professor of economics; Wayne Fields, Ph.D., professor of English and director of the American Culture Studies Institute; Ronald Freiwald, Ph.D., professor of mathematics; Jonathan Losos, Ph.D., associate professor of biology; James E. McLeod, vice chan-

cellor for students, Dean of the College of Arts and Sciences and ex-officio; Michael Sherberg, Ph.D., associate professor of Italian; and James Wertsch, Ph.D., professor of education and chair of the Department of Education. Students have been appointed to the commission by the Council of Students of Arts and Sciences.

"I am very pleased that the faculty and the students have taken on this important task," said McLeod. "What we teach and what our students learn indicate the kind of institution we are."

What the curriculum emphasizes, how it is structured and sequenced, and how it reflects two decades of change at the University are among the areas the commission will examine.

While the college encourages students to broadly explore its rich, intellectual offerings, it also strives to keep step with the learning called for by students.

"We must address the internationalization of Washington University, in terms of the increase in both the international student population and the international experiences had by our students; education as it pertains to students majoring in more than one discipline; and the areas of internship and service learning," added Bowen.

To expand its own knowledge, the commission will meet with members of other University committees working on related issues. It also will focus on newly developed freshman courses, assess students' skills in areas such as critical and quantitative reasoning, and regard students' general needs within the context of department objectives.

The last major curriculum change occurred 20 years ago when Macias,

Continued on page 8

Reids contribute largest individual gift in business school's history

The John M. Olin School of Business has received more than \$11 million from the estate of James W. Reid, the largest gift ever given by an individual to the business school. The gift was announced by Chancellor Mark S. Wrighton.

"This remarkable gift demonstrates that James and his wife, Marcile, had an abiding faith in and deep commitment to higher education and to Washington University," said Wrighton. "Through this gift, the Reids will have a positive impact on the students and faculty of Washington University for generations to come. We will always be indebted to them for their vision and for this vital support," he added.

Stuart I. Greenbaum, Ph.D., dean of the business school, added: "This gift will allow us to support excellent research and teaching by our staff and innovative programs that bring value to the community. A gift of this magnitude provides major support to our strategic plan to reach the top tier of business schools worldwide, something that would have pleased the Reids."

William H. Danforth, chair of the Board of Trustees, was a long-time friend of the Reids. "Jim and Marcile Reid were generous and caring people who contributed greatly to their community while living and continue to do so through this significant bequest," Danforth said.

"They supported the institutions they believed in. They shared our belief that the Olin School of Business will add another jewel in the crown of St. Louis."

Greenbaum said: "This gift will support Olin's world-class research and teaching and sustain our momentum to the highest ranks among the world's centers of management education. A gift of this magnitude speaks volumes about the Reids' dedication to Olin and their unwavering belief in the strategic direction the school has chosen."

James Reid received a bachelor of science in business administration from the University's business school in 1928.

Continued on page 6



Marcile and James Reid

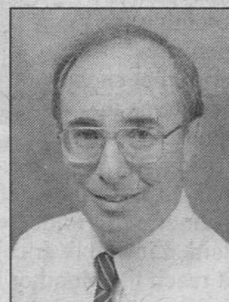
Sandler named vice chancellor; four others promoted

Benjamin S. Sandler, University treasurer, will become vice chancellor for financial policy, effective Sept. 30, according to Chancellor Mark S. Wrighton. Four other members of the University's financial and business division also have been promoted, according to Richard A. Roloff, executive vice chancellor. The promotions coincide with the retirement at the end of the month of Lee G. Weeks as vice chancellor for financial operations.

Sandler will become a member of the University Council, which comprises the chief administrative officers and deans of

the University, all of whom report to the chancellor. His responsibilities will include financial planning and internal audit.

"Ben Sandler has provided excellent leadership in financial aid, financial planning, budgeting and institutional studies throughout his 30-year career at Washington University," said Wrighton.



Benjamin S. Sandler

"In his new position, he will continue to help develop appropriate strategies for the most efficient use of University resources. I look forward to working with him in his new role and as a member of the University Council."

Barbara Feiner, who currently serves as chief investment officer, also will become chief financial officer, reporting to Roloff.

Katherine M. Landmann has been promoted from assistant controller to controller, and Amy B. Kveskin has been promoted from associate treasurer

Continued on page 8

In this issue ...

New insight 2

Scientists identify genetic material needed to cause hepatitis C virus

"A social art" 3

For Jo Noero, the Moore Professor of Architecture, designing buildings plays an important role in society

Hitting the books 6

A new collaborative program lets students study the history of the illustrated book

Medical Update

Scientists create hepatitis C infection with genetic material

Scientists have infected animals with hepatitis C by inoculating them with copies of the virus' genetic material. The study, reported in a recent issue of *Science*, proves for the first time that the hepatitis C virus (HCV) alone is sufficient to cause the disease. This finding should aid in understanding this medically important virus.

"Although HCV was strongly linked to blood-transmitted hepatitis, it was still possible that an additional, unidentified agent was required for disease," said Charles M. Rice, Ph.D., professor of molecular microbiology and head of the research team. "Our study essentially eliminates this possibility."

Research associate Alexander A. Kolykhalov, Ph.D., is lead author of the paper. Scientists at the U.S. Food and Drug Administration (FDA) in Bethesda, Md., also played a pivotal role in the study.

The researchers constructed differing sequences of the virus's ribonucleic acid (RNA) — the genetic material of HCV — and inoculated them into chimpanzees. This enabled them to identify the necessary elements for infection. The availability of unlimited quantities of this well-defined RNA will permit precise studies of how the virus turns itself into more virus. This information is essential to the development of better treatments for hepatitis C, the most common cause of liver failure in the United States.

Hepatitis C is a chronic disease that inflames the liver, producing fatigue and flu-like symptoms. The current therapy — interferon — fails to cure 80 percent of those infected. About 20 percent of people with chronic HCV develop cirrhosis of the liver, which often leads to liver failure and, in some cases, liver cancer.

About 1 percent of the world's population is infected with HCV, though the rate may reach more than 10 percent in some countries. In the United States, the virus was the most common cause of transfusion-associated hepatitis before the development of screening tests for blood donors. It still spreads rapidly among intravenous drug users.

Wanting to define the exact genetic sequence that causes disease, the Washington University scientists derived copies of the RNA from a clinical sample of HCV. Like someone twirling a combination lock, they assembled overlapping pieces to create thousands of different clones. Screening these clones, Kolykhalov identified 34 that might cause infection.

Since the virus replicates poorly in cell cultures, FDA researchers Stephen

Feinstone, M.D., and Kathleen Mihalik injected the 34 clonal RNAs into the livers of two chimpanzees, the only animal model for HCV infection. But neither chimp showed any sign of infection.

Rice's group then compared six of these clones to see which nucleotide occurred most often at each position. This consensus sequence — on paper at that point — matched none of the previously sequenced clones.

The researchers therefore constructed lengths of RNA with the consensus sequence to see if these would prove infectious. They also made nine variants to include potentially important differences at or near the ends of the viral RNA.

The FDA researchers inoculated each of the 10 RNA sequences into different regions of a chimpanzee's liver. They used a different technique to inoculate lower doses into a second animal.

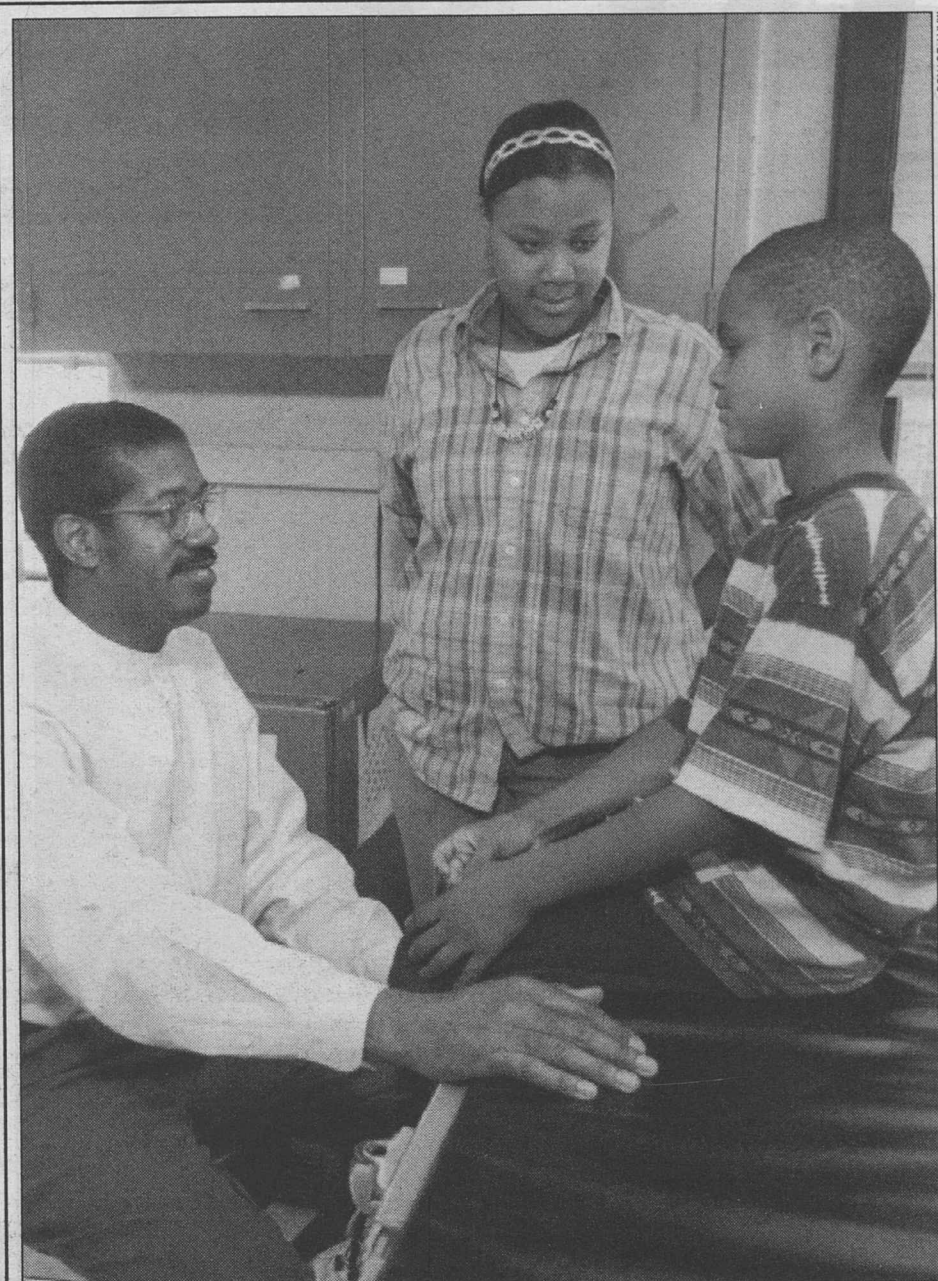
A week after inoculation, circulating viral RNA was clearly detectable in the animals' blood. In subsequent weeks, levels rose steadily. The animals' serum also developed markers for liver damage, and biopsies revealed signs of disease in parts of the liver that had received certain of the constructs.

"The contrast between these results and those from our failed experiments provided some of the strongest evidence that at least one of the inoculated RNA sequences was infectious," Feinstone said. And several tests confirmed that the circulating RNA was inside new virus particles and was not just inoculum leaked from the liver.

Because the researchers had tagged the different variants with silent changes in the genetic letters, they could determine which ones had proved infectious. The consensus strand alone turned out to be sufficient to cause disease.

The group now wants to compare animals that get rid of the virus with those that establish a long-lasting infection. "We need to know what kinds of immune responses eliminate the virus and how HCV manipulates the immune system if we're to develop effective vaccines or immunotherapies," Rice said. "The ability to infect chimpanzees with a defined HCV sequence also provides an unprecedented opportunity for studying HCV evolution and the immune system's response."

The availability of this infectious sequence of RNA also will enable researchers to delete HCV genes to see which are essential for replication. The products of such viral genes are attractive



Taking on new tasks

Larry E. Fields, M.D., (left) assistant professor of medicine, talks with 13-year-old Ebony Holts and her 7-year-old brother, Rico, on Saturday, Sept. 6, at the City of St. Louis' family immunization clinic. Fields recently was named interim director of the St. Louis Department of Health and Hospitals.

targets for the development of drugs such as protease inhibitors, which are so effective against HIV. Both Feinstone's group and Rice's group are transfecting various cells with the cloned RNA in hopes of developing cell culture models and alternative animal models, such as mice. These systems would enhance studies of the infectious process and be a boon to the pharmaceutical industry. Many companies are trying to develop better treatments for hepatitis C, but the lack of experimental systems for evaluating the effects of candidate drugs on HCV replication has hampered progress.

"The fact that interferon therapy works for at least 10 to 20 percent of

patients tells you that hepatitis C is a curable disease," Rice said. "With better drugs, there's a reasonable chance we could control or perhaps eliminate this virus from the majority of people who are chronically infected."

— Linda Sage

Record

Acting editor: Martha Everett, 935-5235, Campus Box 1070

Associate vice chancellor, executive director, University Communications: Judith Jasper

Executive editor: Susan Killenberg

Editor, medical news: Diane Duke, 286-0111, Medical School Box 8508

Assistant editor: David Moessner, 935-5293

Production: Galen Harrison

Record (USPS 600-430; ISSN 1043-0520), Volume 22, Number 3/Sept. 11, 1997. Published for the faculty, staff and friends of Washington University. Produced weekly during the school year, except school holidays, and monthly during June, July and August by the Office of Public Affairs, Washington University, Campus Box 1070, One Brookings Drive, St. Louis, MO, 63130. Periodicals postage paid at St. Louis, Mo.

Address changes and corrections:

Postmaster and non-employees: Send to Record, Washington University, Campus Box 1070, One Brookings Drive, St. Louis, MO, 63130.

Hilltop Campus employees: Send to Office of Human Resources, Washington University, Campus Box 1184, One Brookings Drive, St. Louis, MO, 63130.

Medical Campus employees: Send to Payroll Office, Washington University, Campus Box 8017, 660 S. Euclid Ave., St. Louis, MO, 63110.

Electronic Record: To view the Record on the World Wide Web, go to <http://wupa.wustl.edu/record/record.html>.



Washington

WASHINGTON UNIVERSITY IN ST. LOUIS

Perlmutter to study common cause of infant liver disease

David H. Perlmutter, M.D., the Donald Strominger Professor of Pediatrics and professor of cell biology and physiology, has received a five-year \$1.2 million grant from the National Institute of Diabetes and Digestive and Kidney Diseases to study the most common genetic cause of liver disease in infants.

The disorder, called alpha-1-antitrypsin deficiency, occurs in approximately 1 in every 2,000 babies born in the United States. Newborns who inherit the metabolic defect have a 10 percent to 20 percent chance of having liver disease at birth with symptoms that include jaundice, abdominal swelling and poor appetite.

These infants are at increased risk of developing cirrhosis, which can lead to liver failure and death. As adults, patients with alpha-1-antitrypsin deficiency also are more prone to develop emphysema.

"The goal of this grant is to develop methods to prenatally predict if someone with alpha-1-antitrypsin deficiency is going to have liver disease," said

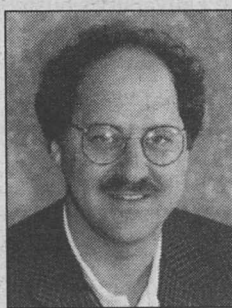
Perlmutter, who also is director of the Division of Gastroenterology and Nutrition at St. Louis Children's Hospital. "Based on that prediction, we could make a rational, therapeutic intervention to control the disease and thus delay or prevent liver failure."

Once a liver goes into failure, the only medical intervention is an organ transplant.

Alpha-1-antitrypsin is a protein that inactivates enzymes that chop up proteins in connective tissue.

People with alpha-1-antitrypsin deficiencies make an abnormally folded version that is retained inside liver cells, so it does not reach the blood or body fluids to carry out its usual function.

Emphysema results from lack of the protein in the lung fluid. Apparently, it is the abnormal molecule's



David H. Perlmutter

retention in liver cells that causes liver injury.

Only a certain number of patients with the deficiency have liver disease. Perlmutter and his colleagues hypothesized that these patients may be unable to degrade the abnormal form of alpha-1-antitrypsin in the quality control apparatus of the cell.

In fact, by introducing the abnormal alpha-1-antitrypsin gene into skin cells from children with the deficiency, the Perlmutter laboratory has shown that cells from children with liver disease could not destroy the abnormal protein whereas those from children with the deficiency but no liver disease were able to break it down.

The new grant will allow Perlmutter to examine the biochemical steps by which liver cells destroy abnormal proteins. He and his colleagues then will develop assays for each biochemical step so that they can determine which patients are at risk for liver failure. The research also will lay the groundwork to develop better pharmacologic interventions.

Washington People

Architect Jo Noero builds better lives

The lifework of South African architect Jo Noero is firmly grounded in a social conscience — using fine form not as a monument to itself, but as the foundation for making lives better.

"Architecture is first and foremost a social art that is shaped by people and society," said Noero, the Ruth E. and Norman G. Moore Professor of Architecture. "In the last 10 to 15 years, there has been a movement for the autonomy of form in architecture that is independent of use, climate, materials and site. A lot of ground has to be recaptured. Architecture is very important to society and architects have an important role to play in serving society."

Having been deeply involved in the anti-apartheid movement in South Africa, Noero understands the power of grassroots building projects to reverse the plight of the downtrodden. Working alongside Anglican leader Desmond Tutu and black community activists, Noero discovered how architecture — initially used by the South African government as a tool of oppression and racial segregation — could be transformed under the resistance movement to create a sense of hope and belonging.

In the early 1980s, Tutu appointed Noero as the architect for the Anglican Church in Transvaal, South Africa. Through Tutu, Noero became involved in the effort to train local black people in construction skills for building desperately needed housing units using readily available materials.

"Tutu believes in a non-racially divided democratic society, and his commitment is unwavering," Noero recalled. "He is an extraordinary and deeply religious man. When many people were going into exile, he was one of the few people who still had a public voice. The way he dealt with the apartheid government was truly inspirational."

Throughout the next decade of tremendous political upheaval and change, Noero continued designing community-based projects in South Africa. In recognition of his work with the disadvantaged, Noero received in 1993 the prestigious Ruth and Ralph Erskine Fellowship from the Swedish Academy of the Arts and Architecture. Noero was awarded the fellowship, which is presented every two years to an international architect, for his educational centers in Soweto and Duduza.

The creation of the Duduza Resource Center, for which Noero also won a 1993 Institute of South African Architects (ISAA) National Award of Merit, was initiated by community members. The initial goal was to build a center to house informal educational projects to address a severe lack of basic skills among black residents. Open 24 hours a day, the multifunctional center is an integral part of the community.

In Soweto, Noero's addition to that township's career center won a 1994 ISAA Award for Excellence. The result of extensive consultation with area leaders, the facility is designed to exude a feeling of empowerment.

Noero's recent work under South African President Nelson Mandela's government has involved designs for a new court facility, housing projects, office buildings and community centers. His major projects include the construction of a youth sports center in Cape Town, which was commissioned by the South African National Sports Congress, and plans for 30 arts centers in rural South Africa, commissioned by the country's Ministry of Arts and Culture.

Understanding architectural culture

When he embarked on his professional career, Noero planned to become a doctor but had to drop out of medical school because, he said, he was unable to face a cadaver — let alone cut into one. He then developed an interest in architecture while traveling in Brazil.

He received a bachelor of architecture degree at the University of Natal, South Africa, in 1977, and earned a master of philosophy in architecture in 1980 from the University of Newcastle-Upon-Tyne in England. In the mid 1980s, he became an architecture professor at the University of Witwatersrand in Johannesburg and established what has become an award-winning international architectural practice.

Noero joined the Washington University architecture faculty last fall and became head of the school's gradu-

ate program. He was installed as the Ruth E. and Norman G. Moore Professor of Architecture on Aug. 29. (See story on page 6.) While he and his wife, Gillian, and their three children now reside in Webster Groves, Noero plans to continue his architectural practice in South Africa as well as establish one in St. Louis.

Architecture Dean Cynthia Weese, FAIA, said Noero's joining the architecture faculty has deepened the school's commitment to understanding other architectural cultures and the importance of culture in architec-

"Americans say they have a housing problem, but there are wonderful buildings here that are vacant and could be used for housing," he observed. "I come from a society where people built shacks for lack of somewhere to live. Here, people seem paralyzed to do anything."

Community empowerment

Noero naturally brings his insights on the urban condition to the studio, as he guides graduate students in tackling theoretical design problems faced by the contemporary

American city. Noero believes the studio experience is essential to teaching students how to develop workable design solutions to community problems.

"Architecture students are exposed to different fields of study, from engineering to cultural history to architectural theory to economics. The design studio is the arena in which these different fields are synthesized," Noero said.

As head of the graduate program, Noero also plans to reintroduce the idea of a design thesis for students to complete before they obtain a master's degree. "It will be a self-initiated project that will be reviewed by a board of eminent practitioners and academics as the culminating point of a student's course of study," he said.

The idea of architecture being central to community solutions is a common theme in Noero's studios, said graduate student Mike Hauser, who last spring participated in a studio that focused on how design techniques and urban planning could be used to reverse urban decay along Manchester Road in St. Louis.

"Professor Noero stresses that people should be included in the dialogue on any community project," Hauser said. "There are so many social issues involved that tend to get put aside when a developer makes all the decisions. He also really gets your mind churning and forces you to focus on how a building is going to be used and who is going to use it."

In a project slated for next spring, students will work with community leaders to create a sustainable neighborhood in north St. Louis. The project calls for

establishing a series of building centers for skills training and small businesses to foster a self-sufficient community. The students also will help rehabilitate some of the housing in the area and teach residents rehab skills.

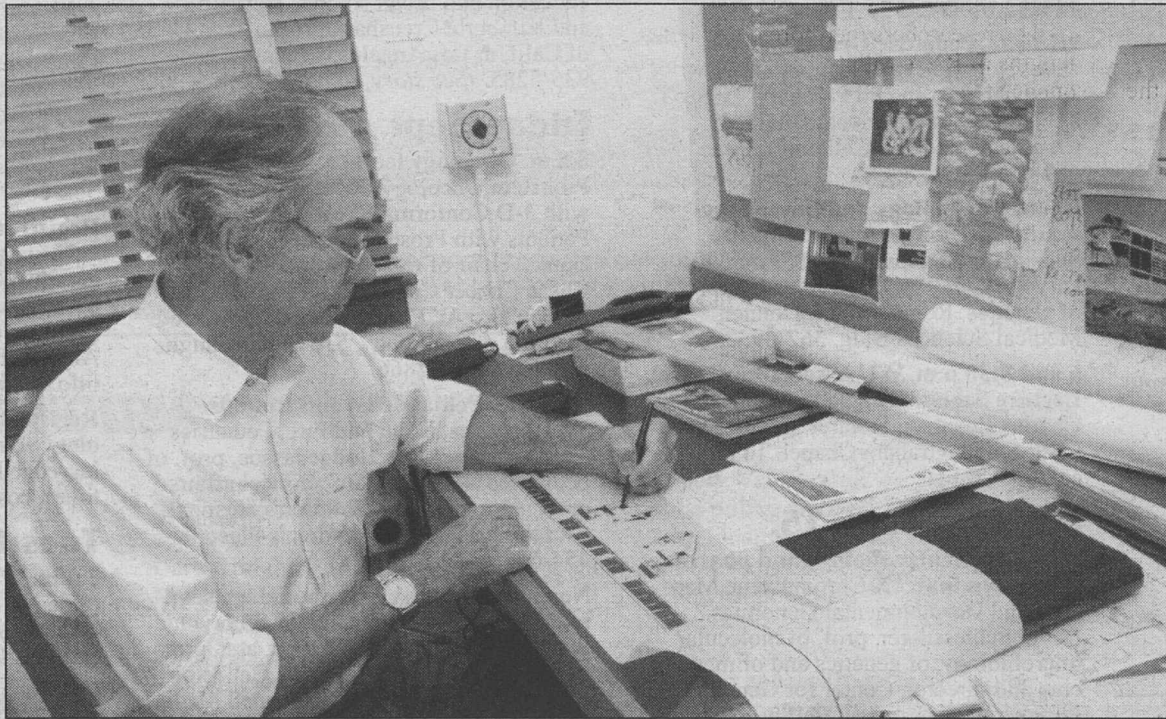
Noero's belief in community empowerment and the restorative powers of a self-sustaining environment is demonstrated in a mixed-use housing project that Franke and he currently are designing in Johannesburg. The project links the disparate South African communities of Wattville and Tamboville through a combination of low-cost housing, small business workshops, taxi stands, a marketplace, light industrial-use facilities (such as a fish hatchery, restaurant and greenhouse), and a productive landscape.

Noero and Franke's designs recently won second place in the international Housing Generator Competition held by the Urban Sector Network, a public interest group in South Africa, and the Rotterdam Academy of Architecture and Urban Planning, in the Netherlands. The project, which combines architectural and landscape architectural solutions, will be displayed in exhibitions in both South Africa and the Netherlands and will be published in a competition book. Drawings and a model of the project also are currently on display in the "Site As Context: Schools of Art and Architecture Faculty Projects" exhibit in University's Gallery of Art in Steinberg Hall.

The Johannesburg project is characterized by a sense of optimism. It fits in with Noero's belief in "working from first principle" — focusing on the basic issues of climate, materials, landscape, space and use to shape architectural form.

"I strive to make buildings that are appropriate to the local context rather than a version of the ideal transplanted from somewhere else," Noero said. "The idea is to give unique expression to each place so that it becomes a specific place, and so that downtown here is not downtown everywhere."

— Ann Nicholson



Above: Jo Noero, the Ruth E. and Norman G. Moore Professor of Architecture, works on a streetscape design for a mixed-use housing project in Johannesburg, South Africa. The project is a collaboration with Tim Franke, assistant professor of architecture. Below: A detail of the design for low-cost housing units. The drawings are on view at the Gallery of Art through Oct. 19.

ture. She added that Noero's exemplary design skills and his experiences as a community-based practitioner are invaluable assets to his teaching.

"We in the school strongly believe that architecture can powerfully enrich people's lives. We also believe this should be available to all people, advantaged and less advantaged," Weese said. "Jo's strong advocacy for the importance of fine buildings that reflect and respond to an entire culture is important to everyone at the school."

Tim Franke, assistant professor of architecture, who has worked closely with Noero on a housing project in South Africa, added: "One of the important attributes that Jo brings to the school is his intense desire to deliver architecture that is derived from one's understanding of the human condition."

"Form and artistry are driven by his focus on context and are built upon a belief that architecture is as much about social support and reconstruction as perhaps any other endeavor," Franke said.

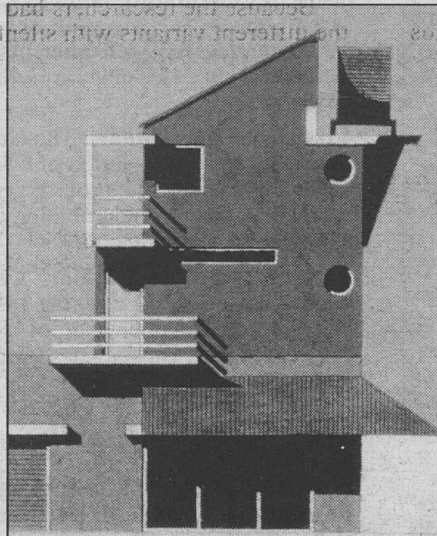
Above all, Noero's work demonstrates that architecture designed to meet a social need also can exhibit fine form and provide for its occupants a direct means of

"Americans say they have a housing problem, but there are wonderful buildings here that are vacant and could be used for housing."

identifying with it. Noero stresses to his students that the way to resist the homogenization of architecture in an increasingly global society is to focus on the context and culture in which one is building.

"I introduce in the studio the idea that really fine, authentic architecture springs from a sense of place and understanding of critical regionalism," he said.

Noero believes that many of the architectural lessons learned in South Africa are applicable to the United States. Having dealt firsthand with the destitute conditions of black South Africans, Noero said he is puzzled by the problem of homelessness here.



Calendar

Visit Washington University's on-line calendar at
<http://cf6000.wustl.edu/calendar/events/v1.1>

Sept. 11-20



Exhibitions

Olin Library Special Collections. "The Gehenna Poets: 1959-1995." Through Oct. 20. Special Collections, level five, Olin Library. 935-5495.

"[Pro]Fusion." An exhibition of installation art by selected MFA candidates. Exhibit runs Sept. 12-22. Reception will be held 5-7 p.m. Sept. 12. Bixby Gallery. 935-4643.

Selections From the Washington University Art Collections. "Art in the Age of Revolution." Through Oct. 12. "Leonard Baskin: Prints." Through Dec. 7. Gallery of Art, lower gallery. 935-5490.

"Site As Context: Schools of Art and Architecture Faculty Projects." Through Oct. 19. Gallery of Art, upper gallery. 935-5490.



Films

Wednesday, Sept. 17

6 p.m. Chinese Film Series. "The Savage Land." Room 219 South Ridgley Hall. 935-5156.



Lectures

Thursday, Sept. 11

8 a.m. Cancer research lecture. "New Strategies in Therapy for Pancreatic Cancer." Margaret A. Tempero, prof. of medicine and deputy director, Eppley Cancer Center, U. of Neb. Medical Center, Omaha, Neb. Clopton Aud. 4950 Children's Place. 286-0008.

Noon. Genetics seminar. "Combinatorial Signaling in Muscle Pattern Formation." Alan Michelson, asst. prof. of medicine, Howard Hughes Medical Institute. Genetics Library, Room 823 McDonnell Medical Sciences Bldg., 362-3365.

4 p.m. Earth and planetary sciences colloquium. "Osmium Isotopes, Weathering, and Climate Change." Rachel Oxburgh, U. of Edinburgh and Lamont-Doherty Earth Observatory of Columbia U. 362 McDonnell Hall. 935-5610.

Woman's Club holds annual "High Tea"

The Woman's Club of Washington University will hold a "High Tea" from 1 to 3 p.m. Wednesday, Sept. 17, at Stix International House. Chancellor Mark S. Wrighton will address the group at 1:15 p.m. The tea is open to all club members and prospective members.

The annual event offers newcomers to the University community an opportunity to become familiar with the club's activities. The Woman's Club is open to women who serve as or are married to members of the University faculty, administration and staff. Alumnae and female graduate students and postdoctoral fellows also are welcome.

For information, call (314) 863-4853.

4 p.m. East Asian studies lecture. "New Memories in Meiji Japan: Exorcising Ghosts, Finding Childhood." Stefan Tanaka, U. of Calif. at San Diego. Room 30 January Hall. 935-4448.

4:15 p.m. Philosophy colloquium lecture and discussion. "Rational Imaginings, Responsible Knowings: How Far Can You See From Here?" Lorraine Code, prof. of philosophy, York U., Toronto. Room 362 McDonnell Hall. 935-5427.

Friday, Sept. 12

9:15 a.m. Pediatric Grand Rounds. "Nasolacrimal Duct Obstruction: New Approaches to an Old Problem." Gregg T. Lueder, asst. prof. of ophthalmology. Clopton Aud., 4950 Children's Place. 454-6006.

Noon. Cell biology and physiology seminar. "Diabetic Yeasts: Glucose Sensing and Response in a Simple Eukaryotic Cell." H. Mark Johnston, prof. of genetics. Room 426 McDonnell Medical Sciences Bldg. 362-6950.

6 and 8:30 p.m. WU Association Travel Lecture Series. "People of Poland." Charles Hartman, lecturer and presenter. Cost: \$4.50. Graham Chapel. To register, call 935-5212.

Monday, Sept. 15.

Noon. Molecular biology and pharmacology seminar. "X Chromosome Mapping and Developmental Genomics." David Schlessinger, prof. of molecular microbiology, of genetics and of medicine and director, Center for Genetics. Pharmacology Library: Philip Needleman Library, Room 3907 South Bldg. 362-2725.

3:45 p.m. Physics seminar. "Mechanisms of Cell Motility Within a Cell Mass." James McNally, prof. of biomedical computing. 3:30 refreshments; 3:45 lecture. Room 241 Compton Hall. 935-6276.

4 p.m. Biology seminar. "The Genetic Architecture and Evolution of Complex Traits." Jim Cheverud, prof. of genetics and of anatomy and neurobiology. Room 322 Rebstock. 935-6860.

4 p.m. Biostatistics seminar. "Computational Anatomy: An Emerging Discipline." Michael Miller, prof. of biomedical engineering. Biostatistics Library, 706 S. Euclid. 362-3606.

Tuesday, Sept. 16.

9 a.m. Psychiatry lecture. Eli Robins Lecture. "Illusions of Memory: Remembering Events that Never Happened." Henry Roediger, prof. and chair of psychology. Clopton Aud., 3950 Children's Place. 747-2680.

Noon. Molecular microbiology/microbial pathogenesis seminar. "Microbial pili: Biogenesis and Functions in Recognition." Scott Hultgren, assoc. prof. of molecular microbiology. Cori Aud., 4565 McKinley Ave. 362-3692.

12:10 p.m. Physical therapy research seminar. "Caregiver Issues With Cognitively Impaired Elderly." Carolyn Baum, asst. prof. of occupational therapy and of neurology and Elias Michael Director of the Program in Occupational Therapy. Classroom C Forest Park Bldg., 4444 Forest Park Blvd. 286-1400.

4:30 p.m. Art history and archaeology lecture. "From Asukadera to Yakushiji: Historical Archaeology of the Nara Basin during the Seventh Century." Donald F. McCallum, U. of Calif. at Los Angeles. Room 116 Givens Hall. 935-5270.

Wednesday, Sept. 17.

8 a.m. Obstetrics and Gynecology Grand Rounds. "Management of Labor and Delivery of the Extremely Preterm Fetus." Molly E. Klein, chief resident in obstetrics and gynecology. Clopton Aud. 4950 Children's Place. 362-7139.

11 a.m. Assembly Series lecture. "The Double Canonicity of the Hebrew Bible." Robert Alter, prof. of comparative literature and religion, U. of Calif. at Berkeley. Graham Chapel. 935-5285. (See story on page 5.)

Thursday, Sept. 18.

Noon. Genetics seminar. "Molecular Genetics and Prognosis in Head and

Neck Cancer Patients." Steven Scholnick, asst. prof. of otolaryngology. Genetics Library, Room 823 McDonnell Medical Sciences Bldg. 362-7072.

1:10 p.m. Social work lecture. "St. Louis 2004: A Vision for a Vibrant Community." John C. Danforth, chairman, St. Louis 2004. Brown Hall Lounge. 935-5687.

4 p.m. Assembly Series lecture. "The Cultural and Legal Meaning of Desegregation: Has It Been Achieved? Can It Be Achieved?" Charles V. Willie, prof. of education and urban studies, Harvard U., and Kimberlé Crenshaw, prof. of law, U. of Calif. at Los Angeles. Graham Chapel. 935-5285. (See story on page 5.)

Friday, Sept. 19.

8 a.m. Oncology lecture. The Norman K. Probstin Oncology Lecture. "Experience with 3-D Conformal Treatment of 1000 Patients with Prostate Cancer." Gerald E. Hanks, chair of radiation oncology, Fox Chase Cancer Center, Philadelphia, Pa. Scarpellino Aud., first floor, Mallinckrodt Institute of Radiology, 510 S. Kingshighway Blvd. 362-2866.

9:15 a.m. Pediatric Grand Rounds. "Earthquakes, Wind and Fire: Pediatrics and Disasters." Dee Hodge, assoc. prof. of pediatrics and assoc. dir., clinical affairs-emergency services, Children's Hospital. Clopton Aud., 4950 Children's Place. 454-6006.

Noon. Cell biology and physiology seminar. "Neural Differentiation of Embryonic Stem Cells." James E. Huettner, asst. prof. of cell biology and physiology. Cell Biology Library, Room 426 McDonnell Medical Sciences Bldg. 362-6950.

Saturday, Sept. 20

9 a.m.-3:30 p.m. African and Afro-American Studies and European Studies conference. "African-American Artists and Intellectuals in Europe: Russia, France and England." Women's Bldg. Lounge. 935-5690.



Music

Friday, Sept. 19.

8 p.m. Violin and fortepiano recital. Program: Schubert. Christine Busch, violin; Seth Carlin, fortepiano. Steinberg Hall Aud. 935-4841.

Saturday, Sept. 20.

8 p.m. Graduate recital. Lori Barrett, soprano; Henry Palkes, piano. Graham Chapel. 935-4841.

8 p.m. The Newberry Consort in concert. "Amazons and Mad Women: Popular Music and the Art Song in Late 17th-Century England." Umrath Hall Lounge. 935-4841.



Performances

Wednesday, Sept. 10

8 p.m. Dance concert. "Dance Close-up," an informal dance concert by performing arts and dance faculty members. (Also Sept. 11, 12, and 13, same time.) Dance Studio, Room 207 Mallinckrodt Center. Cost: \$10; \$7 for senior citizens, faculty, staff and students; and \$5 to sit on the studio floor. 935-6543.

Friday, Sept. 12

8 p.m. Edison Theatre's "OVATIONS!" series performance. Max Roach, jazz drummer. (Also Sept. 13, same time.) Cost: \$23. Edison Theatre. 935-6543.



Miscellany

Registration open for the following Office of Continuing Medical Education seminars. "Contemporary Cardiothoracic Surgery" (Sept. 18-20) and "New Techniques in Urinary Incontinence and Female Urology" (Oct. 18). Eric P. Newman Education Center. For times, costs and to register, call 362-6891.

Registration open for the AIDS Clinical Trials Unit symposium. "HIV Disease in Women and Their Newborns: Treatment and Prevention Strategies" (Sept. 12). The Radisson Hotel, St. Louis Airport. For schedules, cost and credit info., call 362-2418.

Registration open for Diagnostic Radiology seminar. "Practical Issues in Leading-edge Radiology II" (Oct. 17-19). For times, costs and to register, call 362-2916.

Tuesday, Sept. 16

7 p.m. WU Dance Theatre audition. (Open to all Washington University students.) Room 207 Mallinckrodt Center. 935-4795.

Wednesday, Sept. 17.

1-3 p.m. High Tea. Hosted by the Woman's Club of Washington University. Open to members and prospective members. Stix International House. 863-4853. (See story below.)

7 p.m. Printmaking lecture and studio tour. "The Gehenna Poets 1959-1995." Leonard Baskin, artist and printer. Inauguration of Washington University's new Nancy Spirtas Kranzberg Studio for the Illustrated Book. West Campus Conference Center. 935-5495.

Friday, Sept. 19.

6 p.m. Book arts workshop. "Record Your Personal Journey in Textiles and Text." (Continues Fridays through Oct. 24.) Cost: \$175/series. Room 104 Bixby Hall. To register, call 935-4643.

Saturday, Sept. 20.

9 a.m. Book arts workshop. "Learn Basic Bookbinding." Cost: \$35 plus \$15 supply fee. Room 104 Bixby Hall. To register, call 935-4643.

9:30 a.m. Library workshop. Learn how to use a library. (Also, Oct. 4.) Olin Library. To register, call 935-6777.

10 a.m. University College writing workshop. "Internet for Journalists (and Others)," Tatnall Warner, editor for electronic media, St. Louis Post-Dispatch, and lecturer in communications and journalism. Enrollment limited. (Continues Sept. 27, same time.) Cost: \$70. For more info. and to register, call 935-6788.

Health and wellness task force forming

Volunteers are needed to assist in the University's effort to establish a comprehensive Health and Wellness Program for the Hilltop Campus. As members of the Campus Health and Wellness Task Force, volunteers will identify such existing programs on campus, design new ones and formulate a plan for promotion and implementation. Students, faculty and staff are welcome to join the task force.

An orientation meeting will be held at 7 p.m. Wednesday, Sept. 17, in the Women's Building Lounge. Attendees will form committees to meet the goals of the long-term program.

For more information, call Betsy Foy, quality management coordinator/health educator in the Student Health and Counseling Service, at (314) 935-7386.

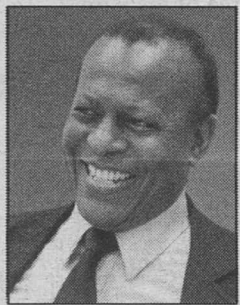


Croquet, anyone?

George Warren Brown School of Social Work students enjoy a school-organized get-together Aug. 23 on the Brown Hall lawn. Croquet players are (from left) second-year student Vivian Robinson; first-year student Heather Sauer; second-year student Kim Rosenstein and her husband, Rick; and first-year student Katherine Stern.

Scholars discuss meaning of desegregation

Charles Vert Willie, professor of urban studies at Harvard University, and Kimberlé Crenshaw, professor of law at the University of California at Los Angeles, each will deliver an address on the subject of desegregation at 4 p.m. Thursday, Sept. 18, as part of the Assembly Series. The discussion, titled "The Cultural and Legal Meaning of Desegregation: Has It Been Achieved? Can It Be Achieved?" will take place in Graham Chapel. Following the lecture, the two also will participate in a



Charles Vert Willie

panel discussion on desegregation to be presented by Washington University's Mellon Minority Undergraduate Fellowship Program. The discussion will take place from 6 to 8 p.m. in the Women's Building Lounge. Both events are free and open to the public.

Willie, a sociologist, is a professor of education and urban studies at Harvard University's Graduate School of Education. He is the author of 23 books and more than 100 articles.

Dedicated to solving social problems, Willie has been a court-appointed master and an expert witness or consultant in several school desegregation cases.

Willie has served as vice president of the American Sociological Association and as

president of the Eastern Sociological Society. In addition, he has served, by appointment of then-President Jimmy Carter, on the President's Commission on Mental Health.

Crenshaw, who is also a professor at Columbia Law School, has lectured and written extensively on civil rights, black feminist legal theory, race, racism and the law.

A specialist on legal issues confronting black women, she assisted the legal team representing Anita Hill.

Her work has appeared in the *Harvard Law Review*, the *National Black Law Journal*, *Stanford Law Review* and *Southern California Law Review*.

The Mellon Fellowship's panel discussion following the lecture will be moderated by Gerald L.



Kimberlé Crenshaw

Early, Ph.D., director of African and Afro-American Studies and Merle Kling Professor of Modern Letters in Arts and Sciences. Willie and Crenshaw will be joined in the panel discussion by William H. Danforth, chair of the Board of Trustees and the appointed settlement coordinator for the St. Louis school desegregation case; Susan Uchitelle, executive director of St. Louis' Voluntary Interdistrict Coordinating

Council; Valerie Bell, an attorney and public policy adviser; and John Wright, assistant superintendent of personnel for the Ferguson/Florissant School District.

The Mellon Minority Undergraduate Fellowship Program, established by the Andrew W. Mellon Foundation, is designed to encourage talented undergraduate minority students to obtain doctoral degrees in the humanities and pursue careers in higher education.

Sports

Compiled by Mike Wolf, asst. athletic director for media relations, and Kevin Bergquist, asst. director, sports information. For the most up-to-date news about Washington University's athletics program, access the Bears' Web site at www.sports-u.com.

Football Bears open in record-setting fashion

Backed by the best statistical defensive performance in school history, Washington University opened the 1997 gridiron season with a 44-0 victory over Rhodes College (Memphis, Tenn.) Saturday, Sept. 6, at Francis Field. The Bear defense stymied the Lynx, holding them to 27 yards in total offense and -37 yards rushing, both WU single-game records. The Bear offense was in high gear with seniors Thor Larsen and Vernon Butler connecting on four touchdown passes.

Current Record: 1-0 (0-0 UAA)

This Week: 1:30 p.m. Saturday, Sept. 13, vs. Illinois College, Francis Field.

Men's soccer begins Joe Clarke era with a win

Under first-year head coach Joe Clarke, WU gained a 5-0 victory versus Fontbonne College on Wednesday, Sept. 3, in Fenton, Mo. The Bears broke open the game with five second-half goals. Senior Ross O'Toole started the outburst with a goal in the 50th minute.

Current Record: 1-0 (0-0 UAA)

This Week: 7:30 p.m. Friday, Sept. 12, vs. Trinity University, Francis Field.

Women's soccer opens with two 1-0 victories

WU's women's soccer team is off to a perfect start after winning a pair of 1-0 road games. The Bears opened with an overtime victory Saturday, Sept. 5, at St. Olaf College (Northfield, Minn.). Junior forward Lori Thomas scored eight min-

John Danforth to address 2004's vision for future

Former U.S. Sen. John C. "Jack" Danforth will speak on "St. Louis 2004: Vision for a Vibrant Community" at 1:10 p.m. Thursday, Sept. 18, in the Brown Hall Lounge of the George Warren Brown School of Social Work. The talk, which is free and open to the public, is part of the school's 1997 fall lecture series.

Danforth represented Missouri in the U.S. Senate for 18 years before retiring in 1994. Now a partner in the law firm of Bryan Cave LLP, Danforth has continued his public life through leadership roles in several community organizations.

Since August 1996, he has been chairman of St. Louis 2004, a 12-county, citizen-based effort to revitalize the St. Louis region through improvements in economic growth, education, capital projects, health care, the arts, culture and citizenship. A major goal of the not-for-profit organization is to develop an agenda for the future of the St. Louis community.

Danforth also is president of InterACT-St. Louis (Interfaith Action for Children Today), a not-for-profit organization he founded in 1995 to create opportunities for church members of all faiths to help inner-city youth. InterACT-St. Louis seeks to broaden awareness of the plight of St. Louis children, to forge relationships among congregations of diverse religious faiths and to create alliances between congregations and other organizations that serve disadvantaged youth.

He also serves on the boards of several non-profit organizations, including the Commission on Presidential Debates, the Concord Coalition and the Danforth Foundation, and he serves on the corporate boards of Cerner Corp., The Dow Chemical Co. and General American Life Insurance Co.

For information, call (314) 935-7453.

utes into the first overtime to tie for career point-scoring honors with 65. Sophomore forward Rachel Sweeney scored the game-winner Sunday, Sept. 6 at Carleton College (Northfield, Minn.).

Current Record: 2-0 (0-0 UAA)

This Week: 5:30 p.m. Wednesday, Sept. 10, vs. Principia College, Francis Field; 4 p.m. Sunday, Sept. 14, vs. University of Illinois, Francis Field.

Volleyball splits at Washburn Classic

WU's volleyball team opened the 1997 season with a split of four matches at the Division II Washburn University Invitational. Juniors Jennifer Martz, Jenny Cafazza and Meg Vitter made the six-player all-tournament team.

Current Record: 2-2 (0-0 UAA)

This Week: 4 and 8:30 p.m. Friday, Sept. 12, at College of St. Benedict Invitational, St. Joseph, Minn.; 1 and 3 p.m. Saturday, Sept. 13, at College of St. Benedict Invitational, St. Joseph, Minn.

Men's cross country wins; women place second

Senior Tyler Small won the Northwest Missouri State University Invitational (Maryville, Mo.) Saturday with a course-record time of 17:47 (3.75 miles) to lead the men's cross country team to victory. Junior Emily Richard won the women's race with a time of 14:49 on the 2.5-mile course. The WU women finished second to NMSU.

This Week: 10 a.m. Saturday, Sept. 13 Bears host Washington University Invitational, Tower Grove Park.

Religion scholar Alter speaks on Hebrew Bible's double canonicity

Religion scholar Robert Alter will deliver a lecture titled "The Double Canonicity of the Hebrew Bible" at 11 a.m. Wednesday, Sept. 17, as part of the Assembly Series. The lecture will take place in Graham Chapel and is free and open to the public.

Alter is the Class of 1937 Professor of Hebrew and Comparative Literature at the University of California at Berkeley, where he has taught since 1967. He has written 17 books, focusing on such topics as the European novel from the 18th century to the present, contemporary American fiction and modern Hebrew literature. He also has written extensively on the literary aspects of the Bible. His book "The Art of Biblical Narrative" won the National Jewish Book Award for Jewish Thought.

Alter earned a bachelor's degree in English from Columbia University in 1957 and earned a master's degree in

1958 and a doctorate in 1962, both from Harvard University and both in comparative literature.

He is a member of the American Academy of Arts and Sciences and the Council of Scholars of the Library of Congress and currently is serving as president of the Association of Literary Scholars and Critics.

He twice has been a Guggenheim Fellow and has been a Senior Fellow of the National Endowment for the Humanities, a fellow at the Institute for Advanced Studies in Jerusalem, and an Old Dominion Fellow at Princeton University.

Fellow of the National Endowment for the Humanities, a fellow at the Institute for Advanced Studies in Jerusalem, and an Old Dominion Fellow at Princeton University.



Robert Alter

University inaugurates new program for the illustrated book

Since its conception in the mid-15th century, the printed book has proven a hospitable and versatile meeting place for the verbal and the visual arts. From early masterworks like Holbein's "Dance of Death" to the illuminated poems of William Blake to contemporary works by artists like Roni Horn and Art Spiegelman, the modern book has steadily evolved into an autonomous art form, possessed of its own unique traditions, history and theory.

On Wednesday, Sept. 17, the University will inaugurate the Nancy Spirtas Kranzberg Studio for the Illustrated Book, a new program devoted to the study and furtherance of the history of the book. The event features a lecture by Leonard Baskin, artist, printmaker and founder of the Gehenna Press, at 7 p.m. in the West Campus Conference Center. An open house and tour of the new studio facility will follow the lecture. Both the lecture and the open house are free and open to the public.

The studio, a collaboration between University Libraries, the School of Art and Arts and Sciences is the result of generous support from Kenneth and Nancy Spirtas Kranzberg.

Nancy Spirtas Kranzberg is a graduate of Arts and Sciences and a long-time supporter of the Washington University Libraries. She is a member of the Libraries' National Council and was the first recipient of the Dean's Medal for outstanding service to the University Libraries.

The studio and the academic program built around it combine three strong University assets: Olin Library's Special Collections, home to one of the Midwest's finest collections of artists' books; the School of Art, which boasts nationally and internationally known faculty; and the strength of writers and writing in Arts and Sciences.

"The illustrated book program builds on the Libraries' expertise and collections in the book arts, as well as the talents of our faculty and students," said Shirley K. Baker, dean of Univer-

sity Libraries and vice chancellor for information technology. "The coincidence of our University strengths and the interests of alumna Nancy Spirtas Kranzberg spawned this creative new program."

Joe Deal, dean of the art school, said: "The term 'interdisciplinary study' is spoken a lot more often than it is actually realized in the academic world. The Studio for the Illustrated Book is an opportunity for a true meeting of disciplines, not only of art, history and the written word but also of new and old technologies. We're very excited about this new program and extremely grateful to Nancy Kranzberg."

Douglas Dowd, associate professor of art, is teaching a course in book design and production this semester. "This is a signal event," Dowd said. "The studio will initiate a truly interdisciplinary program that draws on the University's existing strengths, from image-making and creative writing to printing, paper making, graphic design and historical scholarship. The book serves as a nexus for all these fields, and provides an opportunity to examine them in a broader cultural context."

Kevin Ray, head of Special Collections, also will teach a course, which covers the history of illustrated books. "The program will allow students and

faculty to work through the entire history of publication, from letterpress and offset-lithography to digital publication," Ray said. "It merges the history and theory of word-image interaction with the students' in-studio experiences."

Dowd also noted that the studio will have two distinct yet overlapping missions. "Phase one is the academic, pedagogic function — the teaching of students. Phase two will involve a publication program that is still taking shape and will draw on faculty and student writers and artists. Eventually, we hope to develop and

publish substantial works — works that would be of interest to the marketplace."

In addition to Dowd and Ray's classes, courses in the program's initial year will be taught by new faculty member Kenneth Botnick, associate professor of art. Botnick, formerly co-proprietor of the Red Ozier Press in New York, has a strong background in all aspects of

publication production, including letterpress and offset printing, book-binding, paper making and manuscript selection.

Botnick is former director of the Penland School of Crafts in Penland, N.C. — one of the largest and oldest craft schools in the United States. Prior to his term at Penland, he was a production and design manager at the Yale University Press and taught courses in typography at the Yale School of Art. "The creation of the studio and its emphasis on the illustrated book were strong factors in my coming to Washington University," said Botnick. "The image-text relationship has tremendous potential, both as a teaching tool and as a publication philosophy."

Artist and book-designer Leonard Baskin is world-renowned for his fine craftsmanship, materials and detailed woodcut illustrations. Since founding the Gehenna Press in 1952, he has published dozens of limited edition books, including illustrated versions of classics like "Beowulf," "The Iliad," and Dante's "Inferno," as well as works by William Blake, Robert Frost, Ted Hughes and Alfred Lord Tennyson, among others. Baskin's books are in prestigious collections around the world, including significant holdings in the University's Special Collections.

In recognition of Baskin's visit, an exhibition of prints from the University's collection will be on display in the lower gallery of the Gallery of Art in Steinberg Hall. The exhibition, titled "Leonard Baskin: Prints," will include a selection of the gallery's approximately two dozen works by the artist.

"The gallery has some tremendous Baskins, including three of his largest woodcuts," said Joseph D. Ketter, director of the Gallery of Art. "I think people are going to be amazed when they see the strength of the University's holdings."

The exhibition runs through Dec. 7. Hours for the Gallery of Art are 10 a.m. to 4:30 p.m. weekdays and 1 to 5 p.m. weekends.

—Liam Otten



"Man of Peace," a 1952 woodcut by Leonard Baskin, is on view in the Gallery of Art.

Gift will support teaching, research — from page 1

Over the years, the Reids, who lived in Belleville, Ill., until their retirement to Naples, Fla., gave generously to Washington University. In 1994, the Reid Chair and the annual Reid Teaching Awards were established to recognize excellence in teaching at the Olin School. James Reid, who died in February 1996, and Marcile Reid, who died in December 1994, also supported other institutions in the metropolitan St. Louis area, as well as the College of the Ozarks in rural Missouri.

In 1928, at age 22, James Reid

began working at Robertson's Farm Supply Inc., the company his father founded in 1918. Marcile Reid attended Brown's Business College in East St. Louis and worked at St. Louis Structural Steel Co. until their marriage in 1930.

Upon his father's death in 1931, James Reid took over the family business, and under his direction, the company expanded from making and selling saddles and harnesses to becoming the purveyor of a full line of farm supplies and building materials. He sold the company in 1963.

Campus Watch

The following incidents were reported to the University Police Department from Sept. 1-7. Readers with information that could assist the investigation of these incidents are urged to call (314) 935-5555. This release is provided as a public service to promote safety-awareness on campus.

Sept. 1

6:09 p.m. — An officer on patrol observed six individuals performing skateboard acrobatics on the west side of Mallinckrodt Student Center. It was determined that two of the four individuals that were identified had previously been warned of the policy. The incident will be referred to the Judicial Administrator for violation of a published University policy.

Sept. 3

4:26 p.m. — A student reported that a laptop computer was stolen from Simon Hall.

Sept. 5

6:43 a.m. — A student reported that the rear window of a vehicle parked on Fraternity Way was punctured, causing it to shatter when the door was closed.

7:11 p.m. — A contract security guard assigned to W.I.L.D. discovered that the bed of a truck had been vandalized. A plastic portion of a bedliner and a chrome side ornament were stolen from the vehicle parked in Lot 3, north of Givens Hall.

11:36 p.m. — A student reported that a rock was thrown through a window in Beaumont Residence Hall.

Sept. 6

3:52 a.m. — An officer on patrol discovered that a glass door in McMillen Laboratory appeared to be kicked in.

4:10 a.m. — An officer on patrol discovered that a handicapped-accessible door on the west side of Lopata Hall had the lower pane of glass broken out of it and that a large concrete planter was overturned.

9:20 p.m. — An officer on patrol discovered that a sign regarding the leash law was stolen from the north side of Umrath Hall.

Sept. 7

1:15 p.m. — A student reported receiving a lewd and harassing e-mail message. An investigation is continuing in coordination with the residential computing office.

University Police also responded to six reports of bicycle theft and four additional reports of vandalism.

Jo Noero installed as architecture's Ruth and Norman Moore Professor

The School of Architecture formally installed internationally award-winning South African architect Jo Noero as the Ruth E. and Norman G. Moore Professor of Architecture on Aug. 29.

Noero previously was a tenured faculty member at the School of Architecture at the University of the Witwatersrand, Johannesburg, and has been in private practice in South Africa since 1984. He worked closely with the anti-apartheid movement in South Africa and now continues his community-based architecture both in South Africa and the United States.

Noero joined the Washington University School of Architecture faculty last fall and now also serves as director of the graduate program. He had been a visiting professor of architecture at the school in the spring of 1995 and 1996.

"Jo Noero is an outstanding and highly principled architect and teacher," said Cynthia Weese, FAIA, dean of the architecture school. "He brings both distinguished accomplishment and dedication to our graduate program."

Noero said he is honored to be installed as the Ruth E. and Norman G. Moore Professor in Architecture.

"This is an incredible opportunity to further my teaching here and to both enhance and strengthen the graduate program at such a high-caliber school," Noero said.

The professorship in Architecture was established in 1986 through the generosity of two Washington University alumni, Norman G. Moore and his sister, Ruth E. Moore Garbe. The professorship is the first endowed professorship in the school.

"Endowed professorships are extremely important to Washington University," Chancellor Mark S. Wrighton said.

"They allow us to both attract and retain outstanding faculty. Appointment to a named professorship is a signal of achievement in the career of a faculty member."

Although Garbe died in 1989, Moore has continued his philanthropic support of the school. In 1991, a visiting professorship was established in the Moores' name, and Moore and his wife, Doretha, have just announced a new gift to the school.

"We are extremely fortunate to be the beneficiaries of the generosity of Norman Moore and his sister, Ruth Moore Garbe," Weese said. "Norman's generosity continues to help the school, and he and his wife, Doretha, have just made another gift that will be used to challenge fellow alumni and friends to increase their support of the School of Architecture. They are true friends of the school in every sense."

Noero's work has won numerous awards, including the Ruth and Ralph Erskine Fellowship from the Swedish Academy of the Arts and Architecture, a Carlsberg Prize nomination from the Institute of South African Architects (ISAA), an Award of Excellence from the ISAA, seven Awards of Merit for Outstanding Design from the ISAA, and the 1997 Professor Alexander Petrie Award from the University of Natal for outstanding contribution to the arts and humanities.

Noero has taught in South Africa, England, Norway and Portugal. His work has been featured in numerous international exhibits and architecture publications, and he has lectured internationally. He received a bachelor of architecture degree from the University of Natal and a master of philosophy in architecture from the University of Newcastle-Upon-Tyne in England.

Introducing new faculty members

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

Philip M. Hubbard, Ph.D., assistant professor of computer science in the School of Engineering and Applied Science, joined the University in September 1996. He arrived from Cornell University in Ithaca, N.Y., where he was a postdoctoral research associate in the Program of Computer Graphics from 1994-96. Hubbard received a bachelor's degree, cum laude, in applied mathematics in 1988 from Harvard University; a master's degree in computer science in 1991 from Brown University; and a doctorate in computer science in 1994, also from Brown. Among his areas of interest is interactive applications of computer graphics.

Panos Kouvelis, Ph.D., professor of operations and manufacturing management, was a visiting associate professor here last year. He formerly served as associate professor at Duke University in Durham, N.C., from 1992-96. He received a diploma from the National Technical University of Athens, a master of business administration degree from the University of Southern California at Los Angeles, and a doctoral degree from Stanford University. Last year, students rated him an outstanding teacher in advanced operations strategy and in operations policy and strategy — courses he will teach again this year. His research interests include international operations management, marketing/manufacturing interfaces, manufacturing strategy and project management.

Ambar Rao, Ph.D., the Fossett Distinguished Professor of Marketing, was Ellison Professor of Marketing at the University of Toronto since 1995 and previously was Coca-Cola Professor of Marketing and Management Information Systems and head of the marketing department at the University of Arizona in Tucson. He received a bachelor of technology from the Indian Institute of Technology in India, a master of science from Case Western Reserve University in Cleveland, and a doctorate from the University of Pennsylvania in Philadelphia. His interests include product strategy, marketing management, operations management and total quality management. Rao will teach marketing analysis and marketing policy.

Jeroen Swinkels, Ph.D., professor of managerial economics and business strategy, was associate professor at Northwestern University in Evanston, Ill., since 1992. Previously, he was assistant professor at Stanford University. He has a bachelor of arts degree from Queen's University at Kingston in Ontario, Canada, and a doctoral degree from Princeton University. His research interests include game theory; auctions and other modes of price formation; evolution and learning; and herd behavior and applications. Swinkels will teach competitive strategy.

Frank C-P Yin, M.D., Ph.D., professor and chair of the new Department of Biomedical Engineering, began his appointment on Sept. 1. Yin arrived here from Johns Hopkins University School of Medicine in Baltimore, Md., where he was on the faculty since 1978. At Johns Hopkins, he served as a professor in the Department of Biomedical Engineering and as staff physician in the Adult Catheterization Laboratory at Johns Hopkins Hospital. Among his specialties are myocardial diseases and biomechanics. Yin received bachelor's and master's degrees in aeronautical engineering in 1965 and 1967, respectively, from the Massachusetts Institute of Technology in Cambridge. He earned a doctorate in engineering sciences in 1970 and a medical degree in 1973, both from the University of California at San Diego.

For The Record

For The Record contains news about a wide variety of faculty, staff and student scholarly and professional activities.

Of note

Daniel R. Fuhrmann, Ph.D., associate professor of electrical engineering, has been awarded a \$139,593 grant from the Office of Naval Research to study "Geometric Methods for Subspace Tracking." The work is related to the Navy's efforts to develop new methods of processing signals that come from arrays of multiple radar sensors found on surveillance ships and aircraft. If successful, the research could enhance the utility of existing sensor arrays and influence the design of future Navy radar systems. ...

Three students in the Master of Business Administration Program at the John M. Olin School of Business won three of five prizes in the 10th annual scholarship competition sponsored by the St. Louis chapter of the National Black MBA Association. **Paige Brown, Kevin Joy** and **Danita Woodberry**, all MBA '98 candidates, received \$3,000 as top prize.

Speaking of

Sol L. Garfield, Ph.D., professor emeritus of psychology in Arts and Sciences, delivered the commemorative lecture at the 50th anniversary celebration of the Division of Clinical Psychology at the annual meeting of the American Psychology Association, held Aug. 15-19 in Chicago. He also was a participant on a symposium discussing deep-seated change in psychotherapy. **John A. Stern, Ph.D.**, professor of psychology in Arts and Sciences, also presented an address, titled "The Eye: Reflector of Information Processing," at the meeting. ...

Angela Miller, Ph.D., associate professor of art history in Arts and Sciences, recently was featured in an article in the Chronicle of Higher Education. The article dealt with plagiarism allegations against Robert Hughes, Time magazine's critic and star of a recent public-television series. Miller was among the art history scholars who went uncredited for their contributions to Hughes' book titled "American Visions: The Epic History of Art in America" and an accompanying eight-part documentary series. ...

Rai Ajit K. Srivastava, Ph.D., research assistant professor of medicine, was a distinguished speaker at the World Conference of the Society of Molecular Nutrition and Therapy held in August in Winnipeg, Canada. He presented a paper titled "Bile Acid-mediated Regulation of Apolipoprotein AI Gene Expression."

On assignment

Keith H. Bridwell, M.D., professor of orthopaedic surgery, and **William J. Maloney, M.D.**, associate professor of orthopaedic surgery, were Presidential Guest Speakers at the 70th annual meeting of the Japanese Orthopaedic Association held in June in Sapporo, Japan. Bridwell discussed surgical treatment of scoliosis and Maloney addressed loosening of artificial joints. Prior to the meeting, Maloney was a visiting professor at Catholic University in Seoul, Korea. ...

The keyboard duo of **Maryse Carlin**, instructor of music in Arts and Sciences, and **Seth Carlin**, professor of music in Arts and Sciences, presented four summer concerts in the Baroquefest Münsterland in northern Germany, performing on original fortepianos. They also appeared as piano soloists with the Saint Louis Symphony Orchestra in "Classics in the Loop." In addition, Seth Carlin played two duo

recitals with German violinist Christine Busch at the Michael Haydn Gedenkstätte in Salzburg, Austria. ...

John Madden, a student at the School of Medicine, has been appointed to the American Medical Association (AMA) Council on Ethical and Judicial Affairs. Madden is an active member of the Missouri State Medical Association and served as a Missouri alternate delegate to the AMA in 1995-96. ...

Thomas L. Thomson, professor of architecture, was a panelist in the Housing Issues Symposium at the American Bar Association Pro Bono Conference, held in St. Louis. The discussion centered on the implications of graduate students' involvement in community pro bono work. Thomson spoke on a course he co-teaches with faculty at Saint Louis University's School of Law, School of Social Work and Department of Public Policy. ...

Virginia Dowsing Toliver, director of administration and planning for Washington University Libraries, recently was elected to a two-year term on the executive board of the American Library Association's Black Caucus. The caucus serves as an advocate for the development, promotion and improvement of library services and resources to the nation's African-American community and provides leadership for the recruitment and professional development of African-American librarians.

Guidelines for submitting copy:

Send your full name, complete title(s), department(s), phone number and highest-earned degree(s), along with a typed description of your noteworthy activity, to For The Record, c/o David Moessner, Campus Box 1070, or p72245md@wuvmd.wustl.edu. Items must not exceed 75 words. For information, call Moessner at (314) 935-5293.

Johnson named associate dean and academic coordinator

Sara L. Johnson has been appointed associate dean and academic coordinator in the College of Arts and Sciences, according to James E. McLeod, dean of the College of Arts and Sciences and vice chancellor for students. With the move, Johnson shifts from a post in the central administration to a setting closer to the academic life of the University.

For the past eight years, Johnson had served as special assistant to the chancellor — six years for Chancellor William H. Danforth and the last two for Chancellor Mark S. Wrighton.

In her new role, she will serve as an academic adviser and direct the pre-law advising program. She also will act as academic integrity officer of the college.

"I have been privileged to work with two great chancellors at an important time in Washington University's history," Johnson said. "I look forward to putting my knowledge of the University and its resources to work on behalf of students in the College of Arts and Sciences, which is where my heart has always been."

Said Wrighton: "Sara has served me extraordinarily well during my first two years, and she worked closely and effectively with Chancellor Danforth for six years prior to my arrival. While I regret she is leaving the chancellor's office, Sara will continue to be a great asset to the University."

"Her contributions and positive impact here have been impressive, and we can expect to see her career continue to flourish and the University advance in her new role," Wrighton said.

McLeod added: "Both her experience at the University and her academic background will enable Sara to make a significant contribution to the College of Arts and Sciences. We are delighted that she has agreed to lend her talents to our mission."

Johnson joined the University in 1989 as special assistant to the chancellor. In that capacity, she dealt with a wide variety of policy issues and concerns, as well as community relations, complaint resolution and special projects.

Among her extensive committee work, she served as chair of the committee to revise the student judicial code in 1994-95 and co-chaired the Undergraduate Council last year. She also served as recording secretary for the Chancellor's Cabinet under Danforth and the University Council under Wrighton; she was a member of groups working on staff training, undergraduate



Sara L. Johnson

admissions and minority student recruitment, campus police issues, and inauguration and commencement planning; and she acted as a liaison to Clayton and University City and to the Skinker-DeBaliviere neighborhood.

In addition, she has served as an adjunct member of the law school faculty, teaching Pretrial Practice from 1993-95. She also has served as academic adviser to undergraduate students since 1994-95.

Prior to her arrival at the University, Johnson was the assistant dean for public affairs at the Illinois Institute of Technology's Chicago-Kent College of Law in Chicago from 1988-89. She was a staff attorney and clinical fellow at the University of Chicago's Edwin F. Mandel Legal Aid Clinic from 1987-88. Johnson began her professional career as an attorney at the Schiff, Hardin & Waite law firm in Chicago from 1981-87.

Johnson graduated summa cum laude with bachelor of arts degrees in history and economics in 1978 from Washington University. She earned a juris doctorate in 1981 from the University of Chicago Law School.

Active in the community, Johnson has served on boards for the Campus YMCA-YWCA, the Higher Education Center of St. Louis, the Skinker-DeBaliviere Community Council, and as a member of the Clayton Strategic Issues Committee.

Buckley receives young scientist award for cosmic ray physics

James H. Buckley, Ph.D., recently arrived assistant professor of physics in Arts and Sciences, received the prestigious Shakti P. Duggal Award, which was presented at the 25th International Cosmic Ray Conference, held last month in Durban, South Africa.

The award, given biennially, was established in 1983 to recognize outstanding work by a young scientist in the field of cosmic ray physics. An international committee of distinguished scientists selects the prizewinner, who receives \$1,200. In addition to the award,

Buckley has been invited to present a colloquium at the Bartol Research Institute at the University of Delaware next year.

Buckley holds a bachelor's degree in engineering physics from the University of Toledo and a doctorate in physics from the University of Chicago. From 1993 until this year, he was a postdoctoral research associate at the Harvard-Smithsonian Center for Astrophysics, doing research in gamma-ray astronomy with air Cerenkov telescopes.

His research interests include the

origin of cosmic rays and the study of high-energy gamma ray emissions from supernova remnants. He has co-authored more than 40 articles and given eight invited talks on gamma rays and the origin of cosmic rays.

Buckley also did balloon-borne measurements of high-energy cosmic rays during a research assistantship from 1987 to 1993 at the University of Chicago's Enrico Fermi Institute and physics department. He was awarded a NASA Graduate Student Researchers Program grant from 1988 to 1991.

Opportunities & personnel news

Hilltop Campus

Information regarding these and other positions may be obtained in the Office of Human Resources, Room 130, at West Campus. Job openings may be accessed via the World Wide Web at cf6000.wustl.edu/hr/home. If you are seeking employment opportunities and are not currently a member of the Washington University staff, you may call our information hotline at (314)935-9836. Staff members may call (314)935-5906.

Computer Lab Supervisor

970321. School of Law. Requirements: high school education; experience supporting, installing and troubleshooting IBM-compatible personal computer hardware, including microprocessor and memory maintenance and upgrade; hard disk, diskette and CD-ROM drive maintenance and replacement; power supply troubleshooting and repairs; installation and support of additional cards, particularly laser printers, monitor, keyboards and mouse-based devices; graphical user interfaces and particularly the latest versions of the most popular software productivity products; the latest communications software with concentration in the use of electronic mail programs and World Wide Web browsers.

University Communications Secretary 980066. Public Affairs. Requirements: high school education; completed secretarial training; ability to follow directions; accuracy; good verbal and written skills; ability to handle multiple

tasks; ability to work for four people; ability to meet deadlines set by editor to ensure timely publication of the Washington University Record; and ability to prioritize tasks to ensure timely distribution of new releases, public service announcements, advisories, calendars of events and other public information communications to the media. Responsibilities include documenting incoming notices of events from Hilltop and Medical campuses for the Washington University Record and calendars.

Administrative Assistant, Law Career Services 980067. School of Law. Requirements: bachelor's degree preferred, an equivalent combination of experience and education will be accepted; experience in academic or legal setting preferred; excellent verbal and written communication skills; ability to work well under pressure, work independently and exercise sound judgment.

Financial/Accounting Manager 980068. University College. Requirements: bachelor's degree; familiarity with university accounting systems preferred; ability to handle several activities under pressure; accuracy and timeliness; interpersonal and telephone communication skills; detail oriented. Responsibilities include responsibility for income-related accounting, including registrations, billing and tuition allocations; frequent student contact.

Career Information Specialist 980069. Career Center. Requirements: training or a degree in computer/information science or a related field; customer service and supervisory experience; special library experience (e.g. cor-

porate library) desired; computer literacy, including word processing and database management on PC; working knowledge of some university mainframe applications; knowledge of networks; ability to relate well to a diverse university population; ability to write and edit well; team player; self-starter; dependability; and excellent problem-solving skills.

Accounts Payable Service Rep. Trainee 980070. Accounts Payable. Requirements: high school graduate, three semester hours of accounting or business-related courses in business accounting preferred; working knowledge of routine office equipment, including PC, calculator and typewriter; strong communication, organizational, verbal and alpha numeric skills; word processing, spreadsheet and database experience highly desired.

Administrative Assistant 980072 (part time). Business School. Requirements: high school education, some college preferred; two years office experience; familiarity with MS Word, Excel and Access; strong interpersonal skills; ability to work effectively with faculty, staff members, students and campus visitors; strong written and verbal communication skills; attention to detail; ability to prioritize multiple projects; and maturity and sensitivity in handling confidential information.

Administrative Assistant to Associate Dean and Director of External Affairs 980078. School of Law. Requirements: some college, degree preferred; experience with windows based word processing, mail merges and e-mail; Aldus PageMaker, graphics

presentation, WordPerfect and scheduling software experience preferred; good spelling, grammar and punctuation skills; good filing skills, organizational skills and coordination skills; ability to handle multiple priorities; and ability to communicate well with others, including administrators, faculty and other departments.

Medical Campus

The following is a partial list of positions available at the School of Medicine. Employees interested in submitting transfer requests should contact the Human Resources Department of the medical school at (314) 362-7196 to request applications. External candidates may call (314) 362-7195 for information regarding application procedures or may submit résumés to the human resources office located at 4480 Clayton Ave., Campus Box 8002, St. Louis, MO, 63110. Please note that the medical school does not disclose salary information for vacancies, and the office strongly discourages inquiries to departments other than human resources. Job openings also may be accessed via the World Wide Web at <http://medicine.wustl.edu/wumshr>.

Professional Rater 980175 (part time). Requirements: high school graduate or equivalent, some college preferred; interviewing skills using DIS; superior communication and organizational skills must be of a superior quality. Will train exceptional candidate. Responsibilities include interviewing research subjects using the Diagnostic Interview Schedule; tracking subjects previously enrolled in the research study; working with other staff members to coordinate interviewing process of children.

Technologist 980203. Requirements: bachelor's degree in biology, chemistry or related discipline; experience with protein purification; excellent biochemical technical ability; working knowledge of computers. Responsibilities include providing technical support in biochemistry and molecular biology experiments; protein purification; enzyme assays; cloning; gene expression; and tissue culture.

Financial Analyst 980285. Requirements: bachelor's in business or related field and three to four years related business experience, or MBA or other advanced degree in related field and related work experience as a summer intern. Responsibilities include general program

and finance planning analyses and initiatives; maintaining, enhancing and producing school's Capital Planning Model; serving as lead financial person for annual capital planning retreat; providing secondary support for maintenance, enhancement and production of the school's Resource Allocation Model; providing secondary support for production and development of the school's Faculty Analysis Report/Model; providing secondary support for continued development of the school's Managed Care Economics Model, assisting with departmental financial/resource planning process; assisting with inter-institutional planning efforts at the Medical Center; and assisting with the production and development of other planning models and analyses as needed.

Coordinator, Admissions and Records 980133. Requirements: high school education or equivalent, college degree in education or similar field preferred; two to three years clerical/secretarial experience in a university setting strongly preferred; excellent verbal and written communication skills, strong organizational skills; ability to work as part of a team with a problem-solving mentality; and tactfulness. Responsibilities include general administrative and clerical support to director and administrator, including typing, processing applications scheduling events and activities.

‘Outstanding group’ leads division — from page 1

to treasurer. Both will report to Feiner. Michael J. Dunlap, currently director of financial operations for auxiliary businesses, becomes director of auxiliary enterprises.

“I’m very pleased that we have such an outstanding group of professionals who will continue to successfully manage the University’s financial operations,” said Roloff.

Sandler joined Washington University in 1967 as assistant director of admissions. In 1973 he was appointed director of financial aid, a position he held until 1986, when he was named assistant vice chancellor for budget and institutional studies. From 1993-95, he also served as director of sponsored projects and indirect costs. He was named treasurer in 1995. A 1961 graduate of Bowdoin College, Sandler earned a master's degree from Columbia Teachers College in 1966.

Feiner came to Washington University in September 1996 as director of investment management. Previously, she held a number of positions with Edison Brothers Stores Inc. of St. Louis, including serving as president of Edison Apparel Ventures from 1994-96. She received a bachelor's degree in psychology from Saint Louis University in 1971 and a master of business administration degree from Washington University in 1983. Among her many Washington University alumni activities, she served as chair of the Alumni Board of Governors from 1995-96.

Landmann also came to Washington University from Edison Brothers, where she had been since 1986. She joined Washington University in May 1995 as assistant to the chief financial officer/special projects and was named assistant controller in July 1996. Her last position at Edison Brothers was manager of corporate accounting. A 1982 magna cum laude graduate of the University of Missouri-St. Louis with a bachelor's degree in accounting, Landmann is a certified public accountant.

Kweskin joined Washington University in April 1997, after holding a number of positions at McDonnell Douglas Corp. since June 1985. In her last position at McDonnell Douglas, she managed the domestic Treasury Group for more than five years. Kweskin received a bachelor of science in business administration, summa cum laude, from the University of Missouri-St. Louis in 1985 and a master's of business administration from Saint Louis University in 1989.

Prior to joining Washington University in September 1995 as special assistant to the chief financial officer, Dunlap had been manager of financial reporting for Continental Baking Co., a subsidiary of Ralston Purina Co., in St. Louis. He also held positions at Edison Brothers, including controller for Dave & Buster's, a subsidiary, and manager of corporate accounting. A certified public accountant, he received a bachelor's degree in accounting from Illinois State University in 1983.

close of the current academic year. Following review and revision, suggestions will be made to students and Arts and Sciences faculty next fall.

The commission welcomes suggestions and comments from the University community. E-mail should be addressed to jbowen@artsci.wustl.edu. Send letters to Professor John Bowen at Campus Box 1112.

— Cynthia Georges

Commission welcomes suggestions — from page 1

then associate professor of chemistry, chaired the effort. “The work of the general education requirements put into place 20 years ago has served us well,” said Macias. “The time is right to reevaluate our curriculum with the expectations of the 21st century in mind.”

The commission plans to present recommendations to the Faculty Council and to the curriculum committee by the

Computer science receives grants

Guru M. Parulkar, Ph.D., professor of computer science, and Douglas C. Schmidt, Ph.D., assistant professor of computer science, have received grants from the Defense Advanced Research Project Agency (DARPA) and Sprint Inc. to perform research on high-performance, object-oriented middleware for real-time and multimedia applications.

Middleware is a layer of computer software that has grown increasingly important for a host of applications from e-mail to biomedical imaging, but because of design problems, it also has become inefficient, leading to bottlenecks and delays.

Object-oriented methods allow developers to reuse or recycle common software components, called “objects,” to develop a networking application.

The research is expected to benefit computer application programmers by allowing them to create new, more efficient applications, ranging from better telecommunications to improved air traffic control.

The grant from DARPA is approximately \$650,000 for three years. The grant from Sprint is approximately \$450,000 for 1997 with a possible two-year extension for 1998 and 1999.

“More and more companies are trying to build large-scale distributed systems, and they’re realizing it’s too expensive to do so from scratch,” Schmidt said. “By reusing components, it makes it possible to leverage existing efforts, making it easier to build new systems.”

DARPA is interested in applications such as navigation, air trafficking and battlefield simulation. Sprint, the first telecommunications company to build a large-scale fiber optic network, is interested in developing a distributed software infrastructure that guarantees efficient control of their networking resources and provides guaranteed quality of service to its network users.

Network systems, such as those linking a group of office PCs to each other, are comprised of four intercommunicating layers. The lowest layer is the hardware package. Next is the protocols layer, which contains the rules the network uses to exchange signals and information. For example, on the Internet, the protocols suite is

called TCP/IP. The fourth layer supports software for network applications ranging from the relatively simple application of e-mail to more sophisticated applications such as teleconferencing.

Between the network application layer and the protocols layer lies the middleware. It allows users to develop large, complex distributed, or networked, applications without having to deal with details of the underlying networks and operating systems.

The object-oriented method has emerged as a productive standard for software development and maintenance. If one thinks of a computer program as a recipe for baking a cake, the “objects” are the utensils — the pan, bowl, blender, spoons and measuring cups. With this relatively small set of objects, a cook can make an innumerable amount of recipes.

In the software development world, every time programmers come up with a different recipe — application — they need new utensils — objects. In large, distributed applications comprised of many different layers of software components, the same software elements often are used in different applications. But until recently, when researchers, companies or the government tried to build a new computer system for a particular application, they had to build the system from scratch — an expensive process.

Object-oriented middleware allows developers to reuse objects and to eliminate many tedious, error-prone aspects of developing and maintaining applications by automating common network programming tasks.

“The middleware layer in distributed systems is not designed to support real-time and multimedia applications and over the years has become inefficient,” said Parulkar, who also is director of the School of Engineering and Applied Science’s Applied Research Laboratory. “What we are attempting to do with these grants is to better integrate high-performance networking ... with network protocols, for instance, TCP/IP in the Internet, with object-oriented middleware. We hope to ensure that there are no performance bottlenecks in any of these layers and to support real-time and multimedia applications as well.”

— Tony Fitzpatrick