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Washington University Record, November 10, 1988

RECORD

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Not so big and bad: Performing arts students take to the road this month with a production of "The Nootkan Klukwalle: The Wolf Ritual of the Northwest Coast Indians," a play that dispels the myth of the Big Bad Wolf. Above, students at the Captains School in Clayton take part in the play, which also will be staged Nov. 16 at the St. Louis Science Center in Forest Park. For more information, see story on page 2.

Best view yet

Physicists study molecular motion under ultra-pressure

With the meticulous skill and precision of watchmakers, high-pressure physicists at Washington University have fused two technologies into one package, providing scientists with a unique tool to examine matter under ultra-high temperature and pressure.

Using diamond-anvil cell technology, a method of applying extremely high pressure between two tiny, opposing diamonds, physics doctoral student Sam-Hyeon Lee, and physicists Mark Conradi, Ph.D., and Richard Norberg, Ph.D., are the first scientists to combine nuclear magnetic resonance (NMR) with the diamond-anvil cell.

The technique eventually will allow earth and planetary scientists, for instance, their best view yet of the dynamics of substances under the extraordinary pressure assumed to be at the center of the earth and other planets. It also has potential in industry where scientists may be able to develop better synthetic polymers by examining the characteristics of the polymers under intense pressure. And it may give researchers an insight into the capability of harnessing some of the more common elements in nature.

A technique long used in physics and chemistry, NMR allows scientists to examine molecules by measuring magnetic fields detected by the nuclei of atoms. More recently, NMR has found many applications in medicine, where the tracking of molecules gives doctors a real-life picture on a computer screen of the body's organs and the chemical processes within them.

"The addition of NMR to the diamond-anvil cell method strengthens high-pressure physics," says Conradi. "The NMR detects the rotation and linear motions of molecules, making diamond-anvil cell technology more like a movie than a snapshot. Before, we could determine the structure of solids at high pressure, but this actually lets us see motion."

According to Norberg, professor of physics and head of the physics department, the achievement is a boost to NMR as well as a triumph of irony. "For years, the cumbersome rigs used in high-pressure physics work used to fill a room, but now we can perform many different experiments with two small diamonds," he says.

To avoid cracking the diamonds, the Washington University physicists use flawless gems, each one-quarter of a carat. They add another material, a ruby chip, to measure pressure. With these tools, the team has generated pressures over 100,000 times that of the earth's atmosphere at sea level. Employing a home-made NMR apparatus connected to the diamond-anvil cell by coaxial cables, the physicists have also been able to chart the molecular diffusion of hydrogen under pressure.

In diamond-anvil cell physics, a common way to examine a sample is by X-ray diffraction, an analysis made by passing X-rays through the crystal structure of materials and registering the scattering, or diffraction, image of the rays. But, unlike NMR, X-ray diffraction does not provide any information of motion — only atomic locations.

The NMR signals — the response of the protons in the sample to the magnetic field exerted by the NMR magnet — are played out on a spectrometer — a sophisticated radio receiver and transmitter. The scientists are able to infer the diffusion and rotation of molecules from the spin signals they see. The data from the event can be transferred from the NMR screen to a computer, eventually yielding a plot of molecular diffusion and rotation in terms of pressure and temperature.

The diamond-anvil cell technique is young, the brainchild of physicists in the '50s. Under the enormous pressure generated by the force exerted between the two diamonds, the electrons in the atoms of a substance become excited, the atoms and the properties of the substance — color, density, susceptibility to a magnetic field, electrical resistance, for example — change significantly.

Hydrogen, a gas at room temperature, can become solid at room temperature under the intense pressure of the diamond-anvil cell.

The diamond-anvil cell and its paraphernalia can fit into the palm of a hand; the NMR apparatus is so small that when held between index finger and thumb, it resembles a rather crudely designed earring. Yet the device is 10 times more efficient than a several-ton hydraulic press in reaching pressures that approximate those believed to be at the core of the earth and hydrogen-rich planets like Jupiter, Saturn, Uranus and Neptune.

Thus, geologists and planetary scientists don't need the imagination of a Jules Verne to ponder the center of the earth and other planets. Such knowledge of the earth's interior is still largely theoretical, based on observations near the earth's surface and seismic data. The theories on other planets come largely from extraterrestrial samples and mathematical extrapolation.

"To better understand the inside of Jupiter," Conradi says, "scientists are now able to use a diamond-anvil cell."

Lee, Conradi and Norberg place the diamonds on either side of a metal gasket. A sample, say of hydrogen, the most common element in the universe and a staple of NMR analysis, is trapped in a hole that has been drilled through the gasket. The two diamonds are pressed against each other by the force from a small screw. The liquid is then squeezed down, generating the extremely high pressure.

High-pressure physicists commonly refer to the pressures they reach in terms of "atmospheres." An atmosphere is considered to be the pressure at sea level. The maximum pressure

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Writer Gerald Early receives prestigious Whiting award

Gerald L. Early, Ph.D., assistant professor of English and African and Afro-American studies, has been awarded the prestigious $25,000 Whiting Writer's Award from the New York-based Mrs. Giles Whiting Foundation. The awards, which are given unconditionally, recognize writing potential and literary achievement.

Early is one of 10 writers from across the country to receive the 1988 Whiting Writer's Awards. The other winners are Michael Burkard, Lydia Davis, Bruce Duffy, Jonathan Franzen, Mary La Chapelle, Li-Young Lee, Sylvia Moss, Geoffrey O'Brien and William Vollmann.

The foundation does not accept applications for the award. Candidates are proposed by nominators appointed by the foundation. A small committee of writers, literary scholars and editors then reads the candidates' works before selecting the winners. The foundation's nominators and selectors serve anonymously. This is the fourth year of the awards.

Early, who has been a member of the University faculty since 1982, specializes in 19th-century American literature and 19th- and 20th-century Afro-American literature with emphases in the Afro-American autobiography, slavery, the social and cultural history of jazz, and sports literature. He has lectured on these topics and has published many essays, reviews and poems.

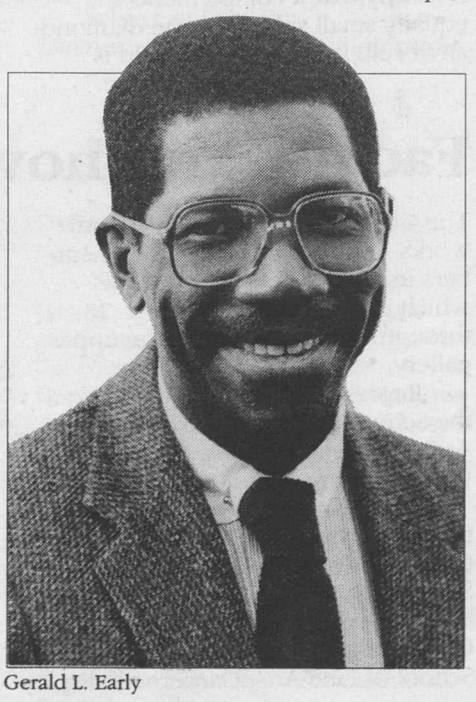
In 1989, Ecco Press in New York will publish Early's collection of essays titled "Tuxedo Junction: Essays Towards a Cultural Definition of America." Next year, Ecco also will publish his work titled "The Culture of Bruising: Essays on Literature, Prizefighting and Modern American Culture."

Early's other works in progress will focus on jazz in Kansas City, Mo., American women and the political aspects of American slavery, and the late writer Richard Wright.

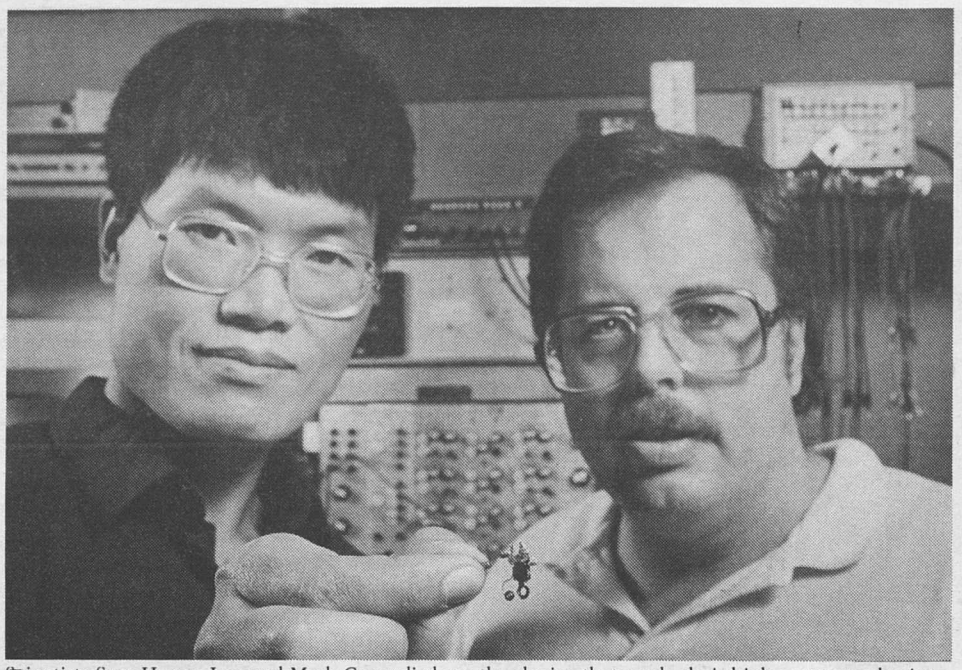
In addition to the selectors for the Whiting Writer's Award, other literaries have applauded Early's work. Robert Atwan, editor of *The Best American Essays,* has invited Early to contribute to the *Goodwill Games Book.* To be published in conjunction with the 1990 Goodwill Games, the book will feature seven American essayists and seven Soviet essayists, each writing about a specific aspect of his or her culture. Early's essay will be on American sports.

Among the other American writers to be included in the book are Joyce Carol Oates and Geoffrey C. Ward. All of the writers have had work

Continued on p. 3



Gerald L. Early



Scientists Sam-Hyeon Lee and Mark Conradi show the device that made their high-pressure physics breakthrough possible. Lee designed the hairpin antenna he's holding, which is no wider than a one-eighth-inch blade of a screwdriver, from copper and ceramic. The antenna slides over a gasket holding the sample, allowing a strong, clear signal of molecular reaction to pressure and temperature.

Ultra-pressure — *continued from p. 1*

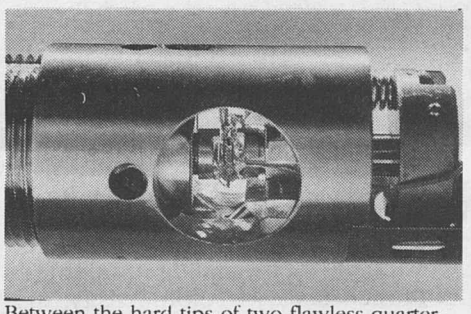
inside the cylinder of a high-compression automobile engine is 50 atmospheres; the air pressure in a high-pressure bicycle tire is 6 atmospheres. At the greatest depth in the oceans, the pressure is about 1,000 atmospheres. The approximate pressure at the center of the earth and Saturn is 3 and one-half million atmospheres.

Diamonds are valued in high-pressure physics because they are transparent and the hardest material used in the science world. Their transparency allows easy passage of light and X-rays; thus, they serve as a window to the sample. A tiny speck of ruby is placed inside the diamond-anvil cell to measure the pressure in the cell. An intense beam of blue light from a laser directly above the diamond-anvil cell interacts with the atoms of the ruby. Once the laser light hits the ruby, its strong deep red fluorescence is measured by a spectograph that charts wavelengths. These are measured against a benchmark of wavelengths known at atmospheric pressure; the shift in wavelength reveals the pressure on the ruby.

The Washington University researchers had to hurdle a couple of key obstacles before putting the technology to work: the researchers can only fit samples of about 50 micrograms, 2,000 times smaller than the usual NMR sample; and the metallic gasket that holds the sample acts as a shield, covering the sample nuclei from the NMR antenna.

To resolve both problems, graduate student Lee designed a hairpin rf resonator (a kind of NMR antenna) that, instead of being wound like an ordinary coil, slides over the gasket. It is so tiny that it complements the equally small sample in the diamond-anvil cell. Its ac magnetic field is intense, making it a good antenna for the spinning protons in the small sample.

Researchers elsewhere, notably Harvard physicist Isaac Silvera, Ph.D., are looking at solid molecular hydrogen under very high pressure in the diamond-anvil cell. Silvera is trying to metallize hydrogen through high pressure; one application of metallic hydrogen could be as a room-temperature superconductor. Perhaps more significantly, Silvera talks of "harnessing" hydrogen for a wide range of possibilities in the future.



Between the hard tips of two flawless quarter-carat diamonds, University physicists, using a hydrogen sample, generated pressure found at roughly 500 miles beneath the earth's surface. Using a home-made NMR device, the researchers charted the world's first recording of molecular movement at such extraordinary pressure.

"If you can harness the explosiveness of hydrogen, you couldn't imagine a better fuel for rockets," Silvera says. "In a blue-sky scenario, hydrogen fuel could lift rockets into space with just a single boost instead of multiple boosts, as is done now.

"The Washington University technique makes an important contribution to the understanding of matter under high pressure. It's another valuable tool in the growing arsenal of high-pressure physics."

Tony Fitzpatrick

Volleyball team is invited to national tournament

Following a record-breaking two months of competition, the Washington University volleyball team is preparing for its "second season."

The Bears, who concluded the regular season with a 36-3 record and a number-three ranking in the Division III national poll, have received an invitation to the NCAA National Tournament. Regional play begins Nov. 10 at the University of Wisconsin-Whitewater. The Bears are seeded second in the regional behind the host school, which is ranked second nationally.

En route to compiling a school-record .923 winning percentage, the Bears reeled off victories in their first 28 matches, and have defeated top-20 contenders Colorado College, Illinois Benedictine College, SUNY-Cortland, Elmhurst (Ill.) College, Menlo (Calif.) College, Simpson (Iowa) College, the University of Rochester (N.Y.), and home-town foes St. Louis University and the University of Missouri-St. Louis.

Fourth-year head coach Teri Clemens points to the demanding regular season schedule as a springboard for success at nationals.

"I'm very excited about our prospects in this year's national tournament," says Clemens. "We've matured as the season progressed, and our schedule gave us ample opportunity to familiarize ourselves with the most formidable Division III opponents. There should be no surprises when we get there."

No surprise, either, has been the spectacular play of Bear All-America selections Lori Nishikawa and Brooke Hortin. Nishikawa, a 5-2 junior setter, has eclipsed the 1,000-mark in assists for the second consecutive season and is nearing the 3,000 plateau in career assists. Hortin, a 5-10 junior outside hitter, has been the Bears' offensive leader, notching a team-high 366 kills. Earlier this season, Hortin surpassed former All-America Chris Becker as the Bears' all-time leader in kills.

Other standouts for the Red and Green have been sophomore outside hitter Kathy Bersett, junior middle blocker Kristi Owen, sophomore middle blocker Dianne Stites, and junior outside hitter Kerry Fagan.

"We've become solid in all six positions," assesses Clemens, "which is a first for us. We simply don't show a weakness on the court in that respect. This team seems to thrive on big matches. I'm confident that we will compete with tenacity at the NCAAs."

Big bad wolf myth is dispelled as performing arts play hits the road

Say the word "wolf" to most Americans and they'll picture something that's big and bad, with gleaming eyes and long fangs. "Little Red Riding Hood" and "Peter and the Wolf" belong to the vast body of lore that depicts the wolf as a vicious threat to humans, livestock and bed-ridden grandmothers.

But the myth of the Big Bad Wolf is dispelled in a new play directed by Jeffery Matthews, artist-in-residence in the Performing Arts Department. "The Nootkan Klukwalle: The Wolf Ritual of the Northwest Coast Indians" will be staged at 6 p.m. Wednesday, Nov. 16, at the St. Louis Science Center in Forest Park.

The production is being held in conjunction with an exhibit "Wolves and Humans: Co-existence, Competition and Conflict," which runs Oct. 28-Jan. 22, 1989, at the center.

The production also will travel to schools in the St. Louis area. The play, which will be performed by a cast of five performing arts students, depicts the Indians' view of the wolf as a respected ancestor, one who is the embodiment of courage.

Written by Steven C. Flamm of the Science Museum of Minnesota, the play tells the story of a 13-year-old girl who experiences her tribe's wolf ceremony, learning about the wolves' courage through the stories they tell. It is a participatory production, with children in the audience becoming actors in the play.

Costumes and props used in the production include authentic raven and wolf masks, deer-claw rattles and a blanket decorated with the image of a wolf sewn out of hundreds of buttons. The button blanket plays an important role in the wolf ritual; according to the myth, when the blanket is placed over an individual who has died, his spirit will come back to life.

Matthews, who teaches acting, voice and speech at the University, says that children's theatre has always fascinated him.

"I get tremendous energy from working with kids. There is such excitement in it," he says. "If we say 'once upon a time,' a child readily allows himself to be transported into that place, wholly suspending his disbelief. That ultimately happens with adults, but you have to work much harder at it. Children are much more open, much more willing to leap into fantasy. They also have an incredible desire to be involved."

Matthews, who recently starred in "Greater Tuna," a Theatre Project Company production, received his master's of fine arts from Virginia Commonwealth University.

Faculty art show opens Nov. 13

The Gallery of Art will display the works of more than 40 faculty members in the annual Faculty Show, which runs from Sunday, Nov. 13, through Sunday, Jan. 8, in the upper gallery.

Represented will be faculty from the School of Fine Arts, the School of Architecture and the Department of Art History and Archaeology.

The Women's Society of Washington University will host a reception for the show's opening from 3-5 p.m. Sunday, Nov. 13.

The exhibition features artist Kevin Garber, a part-time lecturer in the School of Fine Arts. Garber will display black and white plate lithographs that are based on his experiences in the American Southwest.

"The lithographs deal with the sadness and the dark side of the Indian experience," says Garber, who traveled to the Acoma Pueblo in New Mexico. He explains that his work portrays "both the sacred and the spooky."

A variety of media will appear in the faculty show. The display includes architectural sketches, photographs, paintings and sculpture.

Gallery hours are Monday-Friday, 10 a.m.- 5 p.m., and Saturday and Sunday, 1-5 p.m. For more information, call 889-4523.

East Asia literature is topic of lecture

Peter Lee, professor of Korean and comparative literature at the University of California at Los Angeles, will present the Alice Hahn Goodman Lecture in the Assembly Series at 11 a.m. on Wednesday, Nov. 16, in Graham Chapel.

The lecture, which is free and open to the public, is titled "Literary Canons of East Asia."

Lee, chair of the Department of East Asian Languages and Cultures at UCLA, is editor of *Sources of Korean Tradition,* a multi-volume work of Korean intellectual and institutional history.

Lee is author of several books, including *Critical Issues in East Asian Literature, The Silence of Love: Twentieth-Century Korean Poetry,* and *Celebration of Continuity: Themes in Classic East Asian Poetry.*

The Alice Hahn Goodman lecture is held in honor of the former president of the Asian Art Society of Washington University. The talk is sponsored by the Asian Art Society, the Assembly Series and the Department of Asian and Near Eastern Languages and Literatures.

For more information on the lecture, call 889-5285.

NOTABLES

Susan F. Appleton, J.D., professor of law, has accepted the invitation of the New Jersey Bioethics Commission to prepare a report for the New Jersey legislature on law problems posed by various efforts to regulate by statute surrogate-mother contracts. The report will explain to the legislature how best to proceed in light of the positions other states might take on surrogacy, the likelihood of out-of-state or migratory surrogacy arrangements, and prevailing conflicts principles.

Roy Curtiss III, Ph.D., George William and Irene Koechig Freiberg Professor and chairman of the Department of Biology, was selected as the second Herman C. Lichstein Distinguished Lecturer at the University of Cincinnati School of Medicine. Curtiss presented the lecture, titled "Live Recombinant Bacterial Vaccines for Prevention of Infectious Diseases," to the medical students and faculty. While at the University of Cincinnati, he also presented a research seminar on "Mechanisms of Salmonella Colonization and Virulence."

Emma Kafalenos, Ph.D., a lecturer in comparative literature, presented a paper titled "Image and Narrativity in the Book *La Belle Captive*" at an Oct. 21 Washington University colloquium on the works of French novelist Alain Robbe-Grillet, Distinguished Professor of Romance Languages and Literatures at the University.

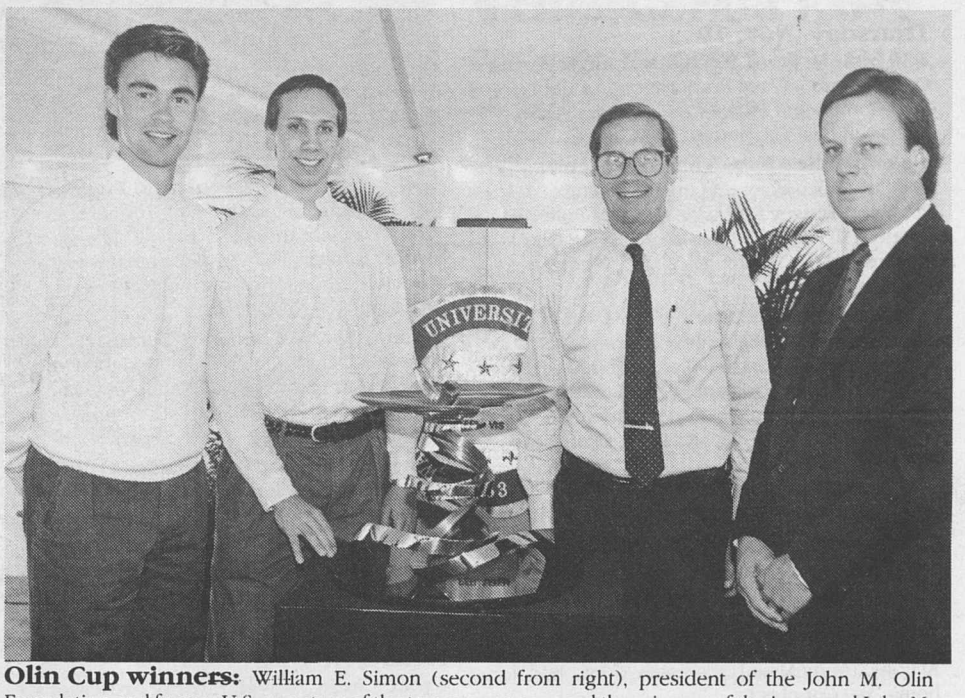
Udo Kultermann, Ph.D., the Ruth and Norman Moore Professor of Architecture, recently delivered a lecture, titled "Lenbachhaus, Stuckvilla, and the Approaches Toward a 'Gesamtkunstwerk,'" at the 12th Annual Conference of the German Studies Association in Philadelphia. The lecture was part of the conference symposium titled "Munich 1900: Art and Culture." The symposium was held in conjunction with the exhibition "Art Nouveau in Munich Master Works of the Jugendstil" at the Philadelphia Museum of Art. The exhibition will later be shown at the Saint Louis Art Museum.

David J. Pittman, Ph.D., professor of sociology, recently was re-appointed to a three-year term on the Missouri Advisory Council on Alcohol and Drug Abuse. Pittman has been on the council since 1987. The council advises the state Division of Alcohol and Drug Abuse on needs and services.

Robert H. Salisbury, Ph.D., Souers Professor of American Government, participated in a roundtable discussion on political activist research at the 14th World Congress of the International Political Science Association, held in Washington, D.C. Other members of the political science department who participated in the meeting are: **Arnold J. Heidenheimer,** Ph.D., professor, presented a paper on "Professional Knowledge and State Policies: A Comparative Historical Perspective"; **Jack Knight,** Ph.D., assistant professor, presented a paper on "Strategic Conflict and Institutional Change," served as a discussant on a panel on political philosophy and thought, and chaired a panel on political theory around the globe; **Carol Mershon,** Ph.D., assistant professor, co-authored a paper on "Workplace Leaders and the Limits on the Mobilization and Representation of Workers"; and **Stephen Stedman,** Ph.D., assistant professor, presented a paper on "Zimbabwe."

Have you done something noteworthy?

Have you: Presented a paper? Won an award? Been named to a committee or elected an officer of a professional organization?
The Washington University Record will help spread the good news. Contributions regarding faculty and staff scholarly or professional activities are gladly accepted and encouraged. Send a brief note with your full name, highest-earned degree, current title and department along with a description of your noteworthy activity to Notables, Campus Box 1070, or by electronic mail to p72245SS at WUVMC. Please include a phone number.



Olin Cup winners: William E. Simon (second from right), president of the John M. Olin Foundation and former U.S. secretary of the treasury, announced the winners of the inaugural John M. Olin Cup competition. Thirty-four teams of business students — 19 MBA teams and 15 BSBA teams — competed. The winners are (from left): juniors John M. Thomas and Evan L. Lukasik, and George B. Pope III, an MBA student. In the competition, teams of business students gave presentations on the topic "What is the impact of corporate takeovers on the worldwide competitiveness of American business?" The three winners received cash awards and replicas of the Olin Cup (center), which was designed by alumnus David M. Jaworski, a lecturer in the metalsmithing department in the School of Fine Arts. The competition, which will be an annual event, was held in conjunction with the dedication of the John M. Olin School of Business, held Oct. 13-14.

Eagleton serves on two U.S. commissions

Thomas F. Eagleton, professor of public affairs, was sworn in as one of nine members of the Commission on Executive, Legislative, and Judicial Salaries, also known as the Quadrennial Commission.

Eagleton also recently was selected by Secretary of Defense Frank Carlucci to serve on the 12-member defense secretary's Commission on Base Closure.

The Quadrennial Commission assembles every four years to study federal salary levels for the highest federal officials. The recommendations go to the president for his approval or modification, and then are submitted to Congress for a vote. Eagleton was selected by the Senate Democrats to serve on the commission.

The Commission on Base Closure has 60 days to make recommendations on which of America's approximately 3,800 domestic military bases should be closed. The commission's recommendations are to be accepted or rejected as a package by both the secretary of defense and the Congress.

Eagleton served for eight years on the Defense Appropriations Subcommittee of the U.S. Senate Appropriations Committee.

Faculty, administrative appointments

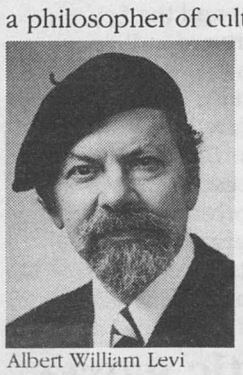
The following is an alphabetical listing of new Hilltop and dental school faculty and administrative staff appointments, as of Sept. 26, 1988. The new appointments list, compiled by the faculty records office, will continue in the Washington University Record over the next few weeks.

Yaotian Fu, assistant professor of physics;
William Alan Gabbey, visiting professor of philosophy;
David S. Gilliam, affiliate associate professor of systems & controls;
Daniel J. Gilman, visiting assistant professor in philosophy;
Subhash Chander Goel, postdoctoral research associate in chemistry;
Michael Gotfried, adjunct lecturer (P-T) in linguistics;
Christine M. Graham, artist-in-residence in dance;
Beata Grant, assistant professor of Chinese language;
William J. Haas, visiting assistant professor of history;
Peter Hall, visiting assistant professor of mathematics;
Sara E. Herman, vocal ensemble director;
Kevin Hinders, visiting assistant professor of architecture;
Christine Hinshaw, assistant professor of history;
Marilyn R. Holmes, associate director of development, arts & sciences;
Allen L. Honeyman, NIH research fellow;
Xiaoming Hu, research assistant in systems science and mathematics;
Alice Hubbard, business manager, School of Law; and
Lawrence W. Iannotti, visiting professor of law.

Memorial service is set for Albert Levi

A memorial service for Albert William Levi, Ph.D., David May Distinguished University Professor Emeritus in the Humanities, will be held at 4 p.m. Friday, Nov. 11, in Graham Chapel. Levi, 77, died on Monday, Oct. 31, after suffering a heart attack.

Levi was internationally known as a philosopher of culture. His scholarly interests ranged over social philosophy, metaphysics and aesthetics. Among his many books are *Philosophy and the Modern World, Humanism and Politics,* and *Philosophy as Social Expression.* He had just completed a yet-unpublished book, *The Highroad of Humanity: The Seven Ages of Western Man.*



Albert William Levi

Levi, who joined the University's philosophy department in 1951, was named David May Distinguished University Professor in 1965. He retired in 1979, but continued to teach a highly popular yearly course, Topics in Social and Political Philosophy.

He received his doctorate from the University of Chicago in 1938 and later served as rector of Black Mountain College in North Carolina from 1947 to 1951. He was a Fulbright Fellow and served on the board of the National Institute for the Humanities.

He is survived by his wife, Ute, and five children.

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Major Medical news

The normal statement of health requirement is waived for TIAA Major Medical during the 1988 open enrollment period. In future open enrollments, the health statement will be waived only for transfers from the University's health maintenance organizations to Major Medical. The health statement will not be waived for transfers from Blue Cross/Blue Shield to Major Medical.

Gerald Early — *continued from p. 1*

featured in *The Best American Essays.* Early's essay titled "The Passing of Jazz's Old Guard: Remembering Charles Mingus, Thelonious Monk, and Sonny Stitt" was selected through a national competition of literary journals and published in *The Best American Essays 1986.*

In the 1988 collection of essays titled *Reading the Fights,* editors Joyce Carol Oates and Daniel Halpern reprinted Early's essay titled "'I only like it better when the pain comes...' More Notes Towards a Cultural Definition of Prizefighting." Oates and Halpern also reprinted Early's essay titled "Hot Spicks versus Cool Spades: Three Notes Towards a Cultural Definition of Prizefighting" in their book.

Since joining the University faculty, Early has received several academic fellowships and grants. He is the recipient of the University of Kansas Minority Postdoctoral Fellowship and the Washington University Faculty Summer Research Fellowship. His professional affiliations include membership in the American Studies Association.

Early received a bachelor's degree in English literature (cum laude) from the University of Pennsylvania in 1974. He has a master's degree (1980) and doctorate (1982) in English literature from Cornell University.

CALENDAR

Nov. 10-19

LECTURES

Thursday, Nov. 10

2:30 p.m. Dept. of Mechanical Engineering Colloquium, "Wave Propagation in Bubbly Two-Component Flows," A.E. Ruggles, Oak Ridge National Laboratory. 100 Cupples II.

3 p.m. Public Affairs Thursday Lecture, "Military Procurement: Is Improvement Possible?" Harvey Sapolsky, Dept. of Political Science, MIT; and Thomas McNaugher, Brookings Institution, Washington, D.C. Women's Bldg. Lounge.

4 p.m. Central Institute for the Deaf (CID) Research Seminar, "Digital Hearing Aids: Some Psychophysics and Two Algorithms," Birger Kollmeier, Drittes Physikalisches Institut at Universitat Gottingen, Federal Republic of Germany. CID Aud., second floor, Clinics and Research Bldg., 909 S. Taylor Ave.

4 p.m. Dept. of Earth and Planetary Sciences Colloquium, "Regional Variations of Seismic Source Properties," Hiroo Kanamori, professor, California Institute of Technology. 102 Wilson.

4:30 p.m. Dept. of Mathematics Colloquium, "Completions of Rings With Group Actions," Andy Magid, professor, U. of Oklahoma. 199 Cupples I.

6:30 p.m. George Warren Brown School of Social Work Alumni Association Lecture, "Taking Charge of Your Career Now," Louis C. Feuer, author of *White Collar Stress*. Brown Hall Lounge. The cost is $5; students, $2. For more info., call 889-4780.

8 p.m. School of Architecture Ralph P. Ranft Memorial Lecture with Alvaro Siza, architect from Porto, Portugal. Steinberg Aud.

Friday, Nov. 11

1-5:30 p.m. Carl Philipp Emanuel Bach Symposium. Brown Hall Lounge. Concert featuring music of C.P.E. Bach, with Kathi Kurtzman, fortepiano; Christine Armistead, soprano; and Charles Brink, Baroque flute. Lecturers: Howard Smither, U. of North Carolina; Hans-Gunter Ottenberg, Technische Universitat, Dresden; Michelle Fillion, Mills College; and Darrell Berg, St. Louis Conservatory.

3:30-5 p.m. Conference on Workers' Self-Organization Lecture, "Civil Rights Organizing in St. Louis During the 1960s: A Discussion With Ivory Perry and George Lipsitz." Perry is a leader in grass roots civil rights activism in St. Louis. Lipsitz has completed a biography, *A Life in the Struggle: Ivory Perry and the Culture of Opposition*. Women's Bldg. Lounge. For more info., contact Don Fitz, 644-8973 (days) or 727-8554 (evenings), or Norah Ryan, 727-0348.

Monday, Nov. 14

3 p.m. Dept. of Chemical Engineering Seminar, "An Object-Oriented Model-Based Reasoning Methodology for Process Fault Diagnosis," Venkat Venkatasubramanian, assoc. prof. of chemical engineering, Purdue U. 100 Cupples II.

4 p.m. Dept. of Biology Seminar, "Toll Gene of Drosophila," Kathryn Anderson, Dept. of Molecular Biology, U. of California/Berkeley. 322 Rebstock.

4 p.m. Dept. of Psychology Colloquium, "Direct and Indirect Measures of Memory in Old Age," Leah Light, Pitzer College, Claremont, Ga. 102 Eads.

7 p.m. AIDS Task Force Lecture with Suzanne Landolphi, volunteer AIDS educator with the Fenway (Boston) Community Health Center's Community Services Department. Edison Theatre.

8 p.m. School of Architecture Lecture Series, "Architecture and Landscape Design Rules: Their Divergence and Modern Consequences," Diana Balmori, partner for landscape and urban design, Cesar Pelli and Associates, New Haven, Conn. Co-sponsored by the American Society of Landscape Architects. Steinberg Aud.

Tuesday, Nov. 15

4 p.m. Cell and Molecular Biology Colloquium, "Activation of GAL Gene Transcription in Yeasts: A Model for Eukaryotic Gene Regulation," Mark Johnston, WU asst. prof. of genetics. Erlanger Aud., 4565 McKinley.

Wednesday, Nov. 16

11 a.m. Alice Hahn Goodman Lecture, "Literary Canons of East Asia," Peter Lee, University of California/Los Angeles. Graham Chapel.

1 p.m. Hillel Brown Bag Lunch Lecture, "A Palestinian State?" Victor Le Vine, WU prof. of political science. Kraegler Lounge, Prince Hall.

4 p.m. Dept. of Philosophy Colloquium, "Making Mind Matter More," Jerry Fodor, prof. of philosophy, Rutgers/CUNY. Hurst Lounge, Duncker Hall.

4 p.m. Dept. of Physics Colloquium, "Those Fascinating Neutrinos," George Kalbfleisch, prof. of physics, Oklahoma U. 204 Crow.

4 p.m. Dept. of Mathematics Analysis Seminar, "Wavelets on Chord-arc Curves," Pascal Auscher, visiting assistant professor of mathematics. 199 Cupples I.

8 p.m. Dept. of English Colloquium, "Representing the Revolution: Politics and High Culture in 1688," Steven Zwicker, chairman of the WU English dept. Hurst Lounge, Duncker Hall.

Thursday, Nov. 17

2:30 p.m. Dept. of Mechanical Engineering Colloquium, "Interactions of Normal Shocks With Turbulent Boundary Layers," Miklos Sajben, Douglas Fellow, McDonnell Douglas Research Laboratories, and WU affiliate professor. 100 Cupples II.

4 p.m. Dept. of Chemistry Seminar, "Triplet State as a Diagnostic Probe in Model Photosynthesis," Haim Levanon, professor, physical chemistry dept., The Hebrew U. of Jerusalem, Israel. 311 McMillen.

4:30 p.m. Dept. of Mathematics Colloquium, "Proper Maps of Balls," John P. D'Angelo, U. of Illinois at Urbana-Champaign. 199 Cupples I.

8 p.m. Students of the Writing Program will read their fiction and poetry. Hurst Lounge, Duncker Hall.

Friday, Nov. 18

4 p.m. Carl A. Moyer Visiting Professor of Surgery Lecture, "Certification — Where Are We Headed?" Ward O. Griffen Jr., executive director, The American Board of Surgery. Clopton Aud.

4 p.m. Dept. of Music Lecture, "New Theories and Fantasies on the 'Moonlight Sonata,'" William Rothstein, U. of Michigan. Blewett B-8.

Saturday, Nov. 19

8 a.m. Carl A. Moyer Visiting Professor of Surgery Case Presentations by general surgery house staff. East Pavilion Aud.

9 a.m. Carl A. Moyer Visiting Professor of Surgery Lecture, "Postgastrectomy Syndromes," Ward O. Griffen Jr., executive director of The American Board of Surgery. East Pavilion Aud.

MUSIC

Friday, Nov. 11

8:30 p.m. Dept. of Music Presents a concert, in conjunction with C.P.E. Bach Symposium, featuring harpsichordist Virginia Black. Steinberg Aud.

Sunday, Nov. 13

2:30 p.m. WU Symphony Orchestra Concert with Dan Presgrave, director. St. Louis Art Museum Theatre in Forest Park.

Monday, Nov. 14

8 p.m. Dept. of Music Presents Soviet pianist and scholar Vladimir Tropp in a recital in Graham Chapel. Co-sponsored by the Smith College Club of St. Louis.

Friday, Nov. 18

8 p.m. WU Dept. of Music Presents WU Vocal Jazz Ensemble Concert with Janet Krupnik, director. Steinberg Aud.

PERFORMANCES

Friday, Nov. 11

8 p.m. Performing Arts Dept. Presents Eugene O'Neill's "Desire Under the Elms." Edison Theatre. (Also Nov. 12, 18 and 19 at 8 p.m. and Nov. 13 at 2 p.m., Edison.) Tickets are $5 for the general public, and $4 for senior citizens and WU faculty, staff and students.

EXHIBITIONS

"Video: Form and Performance." Through Dec. 17. Gallery of Art, Steinberg Hall, lower level. 10 a.m.-5 p.m. weekdays; 1-5 p.m. weekends.

"Eugene O'Neill: A Centenary Celebration," an exhibit drawn from the private collection of Harley J. Hammerman. Olin Library Special Collections. Through Dec. 30. 8:30 a.m.-5 p.m. weekdays.

"Faculty Show," works by WU faculty. Nov. 13-Jan. 8. Gallery of Art, Steinberg Hall, upper gallery. 10 a.m.-5 p.m. weekdays; 1-5 p.m. weekends.

"Washington University Permanent Collection." Through June 30, 1989. Gallery of Art, Steinberg Hall, lower gallery. 10 a.m. to 5 p.m. weekdays; 1-5 p.m. weekends. For more information, call 889-4523.

FILMS

Thursday, Nov. 10

7 and 9:30 p.m. WU Filmboard Series, "Betty Blue." $2. Brown Hall.

Friday, Nov. 11

7 and 9:30 p.m. WU Filmboard Series, "Down by Law." $2. Brown Hall. (Also Sat., Nov. 12, same times, and Sun., Nov. 13, at 4 p.m., Brown.)

Midnight. WU Filmboard Series, "Kids Are Alright." $2. Brown Hall. (Also Sat., Nov. 12, same time, and Sun., Nov. 13, at 9:30 p.m., Brown.)

7:30 p.m. Conference on Workers' Self-Organization Film, "Our Land Too — The Legacy of the Southern Tenant Farmers Union." Graham Chapel. General admission for both workers' conference films is $3; WU employees and students, $2; and free to those who register for the conference.

Saturday, Nov. 12

7:30 p.m. Conference on Workers' Self-Organization Film, "The Wobblies." 215 Rebstock. General admission for both workers' conference films is $3; WU employees and students, $2; and free to those who register for the conference.

Monday, Nov. 14

7 and 9:45 p.m. WU Filmboard Series, "Pocketful of Miracles." $2. Brown Hall. (Also Tues., Nov. 15, same times, Brown.)

Wednesday, Nov. 16

7 and 9 p.m. WU Filmboard Series, "Knife in the Water." $2. Brown Hall. (Also Thurs., Nov. 17, same times, Brown.)

Friday, Nov. 18

7 and 9:30 p.m. WU Filmboard Series, "Sid and Nancy." $2. Brown Hall. (Also Sat., Nov. 19, same times, and at 7 p.m. Sun., Nov. 20, Brown.)

Midnight. WU Filmboard Series, "Stranger Than Paradise." $2. Brown Hall. (Also Sat., Nov. 19, same time, and at 9:30 p.m. Sun. Nov. 20, Brown.) Both the feature and midnight films can be seen for $3. For more info., call 889-5983.

SPORTS

Friday, Nov. 11

7 p.m. Men's and Women's Swimming and Diving, WU vs. Valparaiso U. Millstone Pool.

Saturday, Nov. 12

1:30 p.m. Football, WU vs. Washington and Lee U. Francis Field.

Saturday, Nov. 19

11 a.m. Men's and Women's Cross Country, NCAA Division III national championships. Forest Park.

MISCELLANY

Thursday, Nov. 10

5 p.m. Eugene O'Neill Centennial Celebration Video Premiere, "Before Breakfast." Introduction by O'Neill's granddaughter Annie Chaplan and Mino Damato, director of the video. Drama Studio, Room 208, Mallinckrodt Center.

Friday, Nov. 11

11:45 a.m. WU Woman's Club's Fall Luncheon. Fran Montgomery will bring "Yesterday's Fashions 1840-1920" to the University Club in the University Towers Bldg., 1034 S. Brentwood Blvd. Club members will model the clothes. Cash bar at 11:45 a.m., luncheon at 12:15 p.m. Cost is $13 for members and guests. Members with 50 and 60 years of service will be honored. Parking tickets will be validated. For more info., call Glenda Finnie at 849-4404.

4 p.m. A Memorial Service for Albert William Levi, David May Distinguished University Professor in the Humanities, who died Oct. 31. Graham Chapel.

Sunday, Nov. 13

Noon. The 35th Annual Benefit Brunch and Fashion Show for the Newman Center at WU. Breckenridge Frontenac Hotel, 1335 S. Lindbergh Blvd. The self-supporting center, at 6352 Forsyth Blvd., operates primarily on funds raised by the annual event, which is open to the public. For info. and reservations, call the Newman Center at 725-3358.

Tuesday, Nov. 15

7 p.m. U.S. Visa Workshop on Employment. An immigration attorney will discuss employment issues affecting international students and exchange visitors. Open to the public. Sponsored by the International Office, Stix House, 6470 Forsyth Blvd.

Calendar Deadline

The deadline to submit items for Nov. 17-30 calendar of the Washington University Record is Nov. 11. Items must be typed and state time, date, place, nature of event, sponsor and admission cost. Incomplete items will not be printed. If available, include speaker's name and identification and the title of the event; also include your name and telephone number. Send items to King McElroy, calendar editor, Box 1070, or by electronic mail to p72245KM at WUVMC.

Landscape architect will talk in series

Diana Balmori, visiting critic in landscape history and urban design at Yale University, will speak in the School of Architecture Monday Night Lecture Series. Her lecture will begin at 8 p.m. Monday, Nov. 14, in Steinberg Hall auditorium.

Balmori's lecture, "Architecture and Landscape Design Rules: Their Divergence and Modern Consequences," is co-sponsored by the American Society of Landscape Architects. The lecture and a reception to follow are free and open to the public.

Balmori is a co-founder of the architectural firm of Cesar Pelli & Associates, New Haven, Conn., where she is partner-in-charge of landscape and urban design projects.

Balmori is currently at work on the Hartford (Conn.) Convention Center District Design Guidelines, the Kentucky Botanical Gardens and the Pacific Design Center Plaza (West Hollywood, Calif.). Her previous projects include the Fan Pier Master Plan (Boston, Mass.) and the Ley Student Center Courtyard at Rice University (Houston, Texas).

Her drawings have been widely published and exhibited. A book she co-authored in 1985, *Beatrix Farrand, American Landscapes: Garden and Campus Design,* received a merit award from the American Society of Landscape Architects.

For information, call 889-6200.

Soviet pianist performs Romantic works

Soviet pianist and scholar Vladimir Tropp will perform in a recital at 8 p.m. Monday, Nov. 14, in Graham Chapel. The concert, which is co-sponsored by the Department of Music and the Smith College Club of St. Louis, is free and open to the public.

Tropp will perform works by "late Romantic" Russian composers Medtner, Scirabin and Rachmaninoff. The pianist has recorded works by Medtner and Scirabin, and has lectured and written extensively on Rachmaninoff.

Tropp began his studies at the Gnessin musical school, graduating in 1958 with a silver medal. He then entered the prestigious Gnessin Institute in Moscow, where he was awarded the Rimskii-Korsakov fellowship several times. Since graduating with distinction in 1963, Tropp has taught at the institute.

In 1969 he began performing in cities throughout the Soviet Union. He was a laureate of the International Enesco Competition in Bucharest, Rumania, in 1970. He also has performed in Finland, Italy and West Germany.

For information, call 889-5581.