

Washington University School of Medicine

Digital Commons@Becker

Washington University Record

Washington University Publications

2-20-1986

Washington University Record, February 20, 1986

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

Recommended Citation

Washington University Record, February 20, 1986. Bernard Becker Medical Library Archives.
<https://digitalcommons.wustl.edu/record/366>.

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.

Washington University RECORD



WASHINGTON
UNIVERSITY
IN ST. LOUIS

Indexed

Property of Washington University
Medical Library

FEB 20 '86

TAYLOR ANNEX

Vol. 10 No. 23/Feb. 20, 1986



Farewell tour: Anna Russell, the "crown princess of musical parody," will bring her comedy to Edison Theatre for one show at 8 p.m. Saturday, March 1. For more information, see story on page 2.

Seeds of the future Barley may be transformed to produce useful products

A pickup skids to a halt on the crest of a low ridge, kicking up puffs of dust that disappear quickly into the northern plains wind. The leather-faced driver climbs out and stands for a moment, squinting across waves of golden barley nearing harvest.

"Looks like a fine crop of insulin," he says to the wind, and smiles.

Insulin?

Perhaps. But it might just as easily have been any one of dozens of other pharmaceuticals, enzymes or organic compounds. The point, says John C. Rogers, M.D., a researcher at WU, is that the notion of producing useful products from barley grain is more fact than fancy.

"Barley seeds have a unique capability," says Rogers, associate professor of both medicine and biology. "A part of the seed naturally secretes an extraordinary quantity of protein called alpha-amylase in a short period of time." By altering barley's genetic makeup, Rogers believes the seed could be induced to manufacture other compounds the same way it produces amylase. "Insulin is just one example," says Rogers, "of the types of useful compounds that may be possible."

Rogers may be the first to suggest that a higher plant, grown in a farmer's field, can be genetically transformed to harness its natural capabilities. But the science of discovery, he says, is far more important than potential applications.

"Practical applications are useful to illustrate the potential of scientific research," he says, "but the real basis for our work is to understand how these cells function and how their genetic machinery initiates and controls the phenomenal response we see." Rogers hopes the insights gained in his barley studies will help unravel the mysteries of genetic control processes in other organisms.

A grain of barley, he explains, is a miniature, organic factory with complex internal mechanisms that are marvels of production-line efficiency. When the dormant seed is turned on by moisture, the embryo — a yellowish nugget at the end of the seed — begins secreting a hormone called gibberellic acid. This hormone migrates around the seed's outer shell where a layer of highly specialized cells, aleurone cells, have been built up around the seed's starch-filled interior.

When activated by the hormone, aleurone cells stop what they are doing and begin producing alpha-amylase, which breaks starches stored in the seed into sugar. These sugars provide nutrients for the rapid growth of the seedling.

Aleurone cells are present in all cereal grains, but in barley the layer is especially tough and thick. WU plant physiologist David Ho, Ph.D., has clocked aleurone layers from a single barley seed at 100 micrograms of protein in 24 hours. "Under optimal conditions, a single barley seed

will continue to produce amylase at that rate for 72 hours, up to 300 micrograms," he says. "In the world of biology, that is a tremendous amount of product."

"But the truly exciting thing about it," adds Bill Crosby, head of the department of molecular genetics at the Plant Biotechnology Institute in Saskatoon, Saskatchewan, "is that the amylase is EXCRETED from the cell in a functionally purified form." Pushing the protein outside the cell wall separates it from several hundred thousand polypeptides active inside the cell, Crosby explains.

In sophisticated laboratory research using recombinant DNA techniques, Rogers isolated, sequenced and cloned barley's alpha-amylase genes. More importantly, he was the first to identify and isolate the regulatory region of DNA just "upstream" of the amylase genes that controls how amylase functions in the plant. This sequence includes the complex "on" and "off" mechanisms that start and stop production of the protein.

Experiments now are aimed at identifying exactly what parts of the DNA regulatory segment will result in the proper regulation of foreign material. "We need to know specifically what the DNA segments control so we don't end up with foreign material being expressed in the leaves instead of in the seed," Rogers observes.

Continued on p. 2

Islamic thought focus of Feb. 26 lecture in Graham

Seyyed Hossein Nasr, an expert on contemporary Islam, will speak at 11 a.m. Wednesday, Feb. 26, in Graham Chapel. Nasr's lecture is titled "Islamic Thought in the Contemporary World."

Nasr is University Professor of Islamic Studies at The George Washington University in Washington, D.C. His books include *Knowledge and the Sacred*, *Islam and the Plight of Modern Man* and *Islamic Life and Thought*.

Knowledge and the Sacred, published in 1981, is a collection of lectures Nasr delivered that year as Gifford Lecturer at the University of Edinburgh in Scotland. In these essays, he cites a tendency among contemporary Islamic scholars to analyze Islam in purely secular terms. Nasr's work aims at reversing this secularization and demonstrating the inseparable link between religion and society.

Born in Tehran, Iran, Nasr earned his bachelor's degree in physics from the Massachusetts Institute of Technology. His doctorate is in the history of science and philosophy from Harvard University. He is former dean and vice-chancellor of Tehran University and founder and first president of the Iranian Academy of Philosophy.

Nasr's lecture, sponsored by the Assembly Series, the Islamic Society and Student Union Speakers Committee, is free and open to the public. For more information, call 889-4620.

Candy foundation gives \$325,000 to Alliance campaign

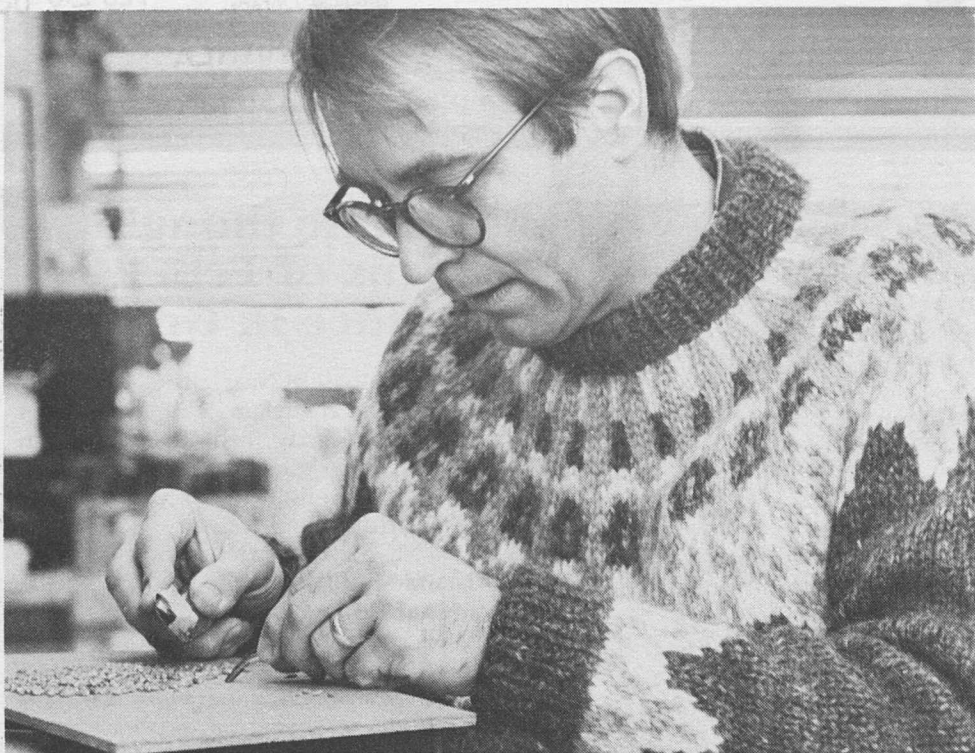
The Coleman/Fannie May Candies Foundation, Chicago, has announced a \$325,000 gift to the ALLIANCE FOR WASHINGTON UNIVERSITY, a \$300 million fund-raising campaign, according to Chancellor William H. Danforth.

The School of Medicine will receive \$250,000 of the gift for cancer research, and another \$75,000 will be awarded to the School of Business for named student scholarships and new study rooms.

Chancellor Danforth said, "The Fannie May gift will facilitate important research in clinical oncology and immunology, and will contribute to the steady strengthening of our business school. We are both pleased and proud to be associated with a fine company like Fannie May, which has already established an excellent reputation in St. Louis for its concern and commitment to the welfare of the general community."

Fannie May purchased 10 Mavros Candy retail stores in 1984 and has since added two Fannie May stores in St. Louis, one in Alton and one in Columbia. The company is planning on continuing an expansion

Continued on p. 3



John C. Rogers, M.D., examines barley seeds in his laboratory at the medical school.

Barley seeds—*continued from p. 1*

The next step, he says, is to insert foreign genes into aleurone cells in place of some of its amylase genes. The gene's regulatory region will then become a slave to the foreign genetic material, producing the desired protein as if it were making amylase.

Will the transformed cells grow into healthy plants capable of producing seeds with the same traits? No one knows for sure, but recent discoveries point toward ultimate success. Although the technique for regenerating whole barley plants from small clusters of transformed cells is still something of a black art, many biologists believe the process will be possible in the near future.

Like many higher plants, barley contains repetitive copies of some genes in its DNA, including multiple amylase genes. Many of those genes are unnecessary for survival of the plant. Through evolution, barley has acquired the ability to regulate multiple gene copies in different positions in the chromosome. It is likely, say the researchers, that barley could maintain normal growth and regeneration and still be capable of producing significant quantities of other material.

If transformed barley can be regenerated, Rogers' research team, considered by many to be a world leader in barley research, may pioneer the way to a new level of biotechnology — plant factories.

Conventional biotechnology uses genetically altered microorganisms — yeast and bacteria — to manufacture chemicals. Foreign genes are inserted into a single cell of bacteria or yeast, which in turn is used to grow huge vats of the transformed microbe. Although the technique has become routine in the laboratory, upscaling to production quantities has proven troublesome. Immense fermentation vats are required to extract modest quantities of product. And the microbes themselves are turning out to be a fickle workforce that must be nurtured under strictly controlled conditions.

Barley, on the other hand, requires no kid-glove handling.

"Barley seeds come in the best possible packaging," says Rogers.

2 The tough, fibrous aleurone layers

can be easily stripped away and dumped into large vats in a process similar to that used in brewing beer. No complicated techniques or extra nutrients are needed for this high-tech version of barley soup, just a simple solution containing calcium and the right pH. Add the "on" hormone, which has been used widely by European brewers for better beer production, and watch the aleurone cells go to work. "After 72 hours, simply drain off the soup and isolate the final product," says Rogers.

"The combination of barley's capability to be stored indefinitely and the existence of the industrial infrastructure already in place to process seeds — the barley malting industry — makes the idea of plant factories feasible," Rogers says. "As our knowledge of plant engineering increases, the process of using barley as a vehicle for biotechnology could be applied to a virtually unlimited number of very useful products."

Robert Brock

RECORD

Editor: Susan Killenberg, 889-5254

Assistant Editor: Laurie Navar, 889-5202

Editor, Medical Record: Betsy McDonald, 362-7569

Washington University Record (USPS 600-430; ISSN 0745-2136), Volume 10, Number 23, Feb. 20, 1986. Published weekly during the school year, except school holidays, monthly in June, July and August, at the Office of News and Information, Campus Box 1070, Washington University, St. Louis, Mo. 63130. Second-class postage paid at St. Louis, Mo.

News items for the medical record section are published once a month and may be sent to Medical Campus, Box 8065.

Address changes and corrections:
Postmaster and non-employees: Send to: *WU Record*, Campus Box 1070, Washington University, St. Louis, Mo. 63130.

Hilltop Campus Employees: Send to: Personnel Office, Campus Box 1184, Washington University, St. Louis, Mo. 63130.

Medical Campus Employees: Send to: Personnel Office, Campus Box 8091, 4550 McKinley Ave., Washington University, St. Louis, Mo. 63110.

'Princess of musical parody' says goodbye

Anna Russell won't let even the stiffest of serious music fans take themselves too seriously. For nearly 40 years, the "crown princess of musical parody," as she has been dubbed by Time magazine, has been poking fun at music history and the cultural elite.

She'll bring her classical brand of comedy to Edison Theatre for one show at 8 p.m. Saturday, March 1.

Russell, who is 74, has been on her latest "farewell" tour since 1983. Her Edison Theatre show will be her last in St. Louis, provided that she really means goodbye. This is not the first time she has embarked on a farewell round of shows, but her devoted fans have always managed to coax her into saying "See you later" instead of "So long."

Her most well-known spoofs include a tongue-in-cheek retelling of Richard Wagner's "Ring" cycle, "the only grand opera in the world," she quips, "that comes in the giant, economy package." She summarizes and pulverizes the German epic, describing the king of the gods as "a perfectly crashing bore," and the hero, Siegfried, as very strong, very brave, very handsome and very

stupid — "a real Li'l Abner type."

Her famous "How to Play the Bagpipes" lesson is based on material taken from the Encyclopaedia Britannica, "a great source of material." Another of her monologues, "How to Write Your Own Gilbert and Sullivan Operetta," requires her to literally change hats, sometimes in the middle of a song, as she simultaneously sings several parts.

Russell trained at England's Royal College of Music, hoping to have a career as a serious singer. But in her first opera role, as Santuzza in "Cavalleria Rusticana," she turned on her ankle and flew across the stage, knocking over a prop. "The audience roared, the orchestra dried up, they laughed so hard, and the performance was over. So was my career," she says.

Or it had just begun. "If everybody's going to laugh anyway, I might as well make a buck," she explains.

Tickets for Anna Russell are \$15 to the general public, \$10 to senior citizens and WU faculty and staff, and \$7 for students. For more information, call the box office at 889-6543.

KWUR-FM holds pledge week

KWUR-FM (90.3) wants to increase its broadcast power.

The volunteers at WU's student-operated radio station have designated Feb. 21-28 as the Second Annual KWUR Pledge Week. They hope to raise enough funds to augment the station's record collection and eventually boost its power from 10 to 100 watts, enabling more students to tune in to KWUR's alternative or "smorgasbord" format, according to Robert Schwartz, general manager. KWUR, which features a variety of music ranging from classical to progressive rock, is located in the basement of the Women's Building.

"The monies from pledge week will allow us to set up a trust fund to increase our broadcasting power," says Schwartz, a junior in the business school. "In addition to more

WU listeners, elevating our power to 100 watts will legally protect us from interference by other radio stations in our broadcast area."

During the fund-raising event, deejays will solicit pledges during their regular programs. "We'll also send out pledge forms, give away KWUR paraphernalia such as T-shirts, bumper stickers and buttons, and have special radio guests during pledge week," says Schwartz.

Persons who pledge \$15 to the station receive a KWUR paraphernalia package. For a \$35 pledge, an individual can be a "guest" deejay for two hours, and for an \$80 donation, members of various organizations can use KWUR's deejay service for their party or other festivities.

All donations are tax deductible. For more information, call 889-5952.

Desegregation probed, judges honored

In recognition of Black History Month, the Black Law Students Association of WU will sponsor a panel discussion on the St. Louis schools' desegregation plan and host a reception honoring area black judges. Both events are free and open to the public.

The student group will sponsor a forum titled "Implementation of the St. Louis Schools' Desegregation Program: Is It Working?" at 7:30 p.m. Thursday, Feb. 20, in Room 316 of Mudd Hall. D. Bruce La Pierre, J.D., the WU professor of law who served as a special master for the desegregation case, will moderate the panel of lawyers and educational administrators.

The association will honor the judges during a reception from 4 to 6 p.m. Wednesday, Feb. 26, in the Foote and Gudder lounges in Mudd Hall. The organization will present a special award to Judge Theodore

McMillian of the U.S. Circuit Court of Appeals, 8th Circuit, to commemorate his 30th year on the bench.

McMillian has been a supervising judge in the WU law school's judicial clerkship program for the past ten years. He frequently has served as a judge for the national moot court and mock trial competitions. On Feb. 26, he will mark his sixth year as a participant in the law school's judicial lecture/demonstration series.

The other judges who will be honored by the association are: Judge Clyde Cahill Jr. of the U.S. District Court for the Eastern District of Missouri; Judge Carol E. Jackson, U.S. Magistrate for the Eastern District of Missouri; and Judges Evelyn M. Baker, Michael B. Calvin, Daniel T. Tillman, Booker T. Shaw and Henry E. Autrey, all of the St. Louis City Circuit Court.

For more information, call Karen A. Keys at 889-6400.

NOTABLES

Pete J. Aleman, senior associate in the Center for the Study of Data Processing, delivered a paper on "Presenting Systems Concepts to Analysts and End-Users" as part of the Train the Trainer Series at the Data Training Conference and Exposition, held in Phoenix, Arizona. Aleman's topic concerned the development and delivery of application development courses for the data processing practitioner and the end-user at the department or small group level.

Robert H. Easton, Ed.D., director of the Student Counseling Service, had an article published in the January issue of the *Journal of College Student Personnel* (Vol. 27, No. 1). Titled "The Use of Work Samples in Recruiting Counseling Service Staff," the article described his service's procedure of receiving from prospective counselors tape-recorded demonstrations of their counseling performance.

Mark A. Franklin, Ph.D., professor of electrical engineering and computer science and director of the Center for Computer Systems Design, presented an invited paper, titled "Clocked Versus Asynchronous Control of Interconnection Networks," at the Microelectronics and Computer Technology Corporation Workshop on Computer Interconnection Networks. The workshop, held Jan. 30 and 31 in Austin, Texas, concerned the design of interconnection networks for use in the next generation of multiprocessor computer systems.

Victor T. Le Vine, Ph.D., professor of political science, undertook a lecture tour to Africa and the Middle East between Dec. 11 and Jan. 16.

During the tour, which was sponsored by the U.S. State Department and the U.S. Information Agency, he visited Paris, Cairo, Nairobi and Israel and lectured in Conakry (Guinea), Kinshasa and Lubumbashi (Zaire), Bujumbura (Burundi) and Mogadishu (Somalia). The lectures dealt with aspects of American domestic and foreign policy and were given to various public and official audiences.

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. Please include a phone number.

alliance gift—

continued from p. 1

program in the metropolitan St. Louis area.

The company was founded in 1915, and now has 212 retail candy shops in 15 states. The foundation has contributed over \$22 million to a number of Midwest civic and scientific institutions, a third of which was committed to cancer research and related facilities; substantial grants also have been awarded to other areas, including housing and education for the handicapped, education, social welfare and civic activities, and cultural arts and humanities.

Philosophers to interact 'face to face'

A Harvard and a Princeton philosopher will interact this weekend in a symposium called "Face to Face," the second Richard Rudner Symposium in Philosophy at WU.

Hilary Putnam, professor of philosophy at Harvard University, and Bas Van Fraassen, professor of philosophy at Princeton University, will discuss issues related to the nature of knowledge and the philosophy of science, on Friday, Feb. 21, and Saturday, Feb. 22, on campus. The sessions are free and open to the public. The schedule is as follows:

Friday, 4 to 6 p.m. — Putnam addresses the question "Is Conceptual Relativity Incoherent?"; Van Fraassen comments. Chaired by Jerome P. Schiller, Ph.D., WU professor of philosophy and chairman of the department. (The first three sessions are in Steinberg Auditorium.)

Friday, 8 to 10 p.m. — Van Fraassen speaks on "What Are Laws of Nature?"; Putnam comments. Chaired by Carl P. Wellman, Ph.D.,

WU professor of philosophy.

Saturday, 10 a.m. to noon — Panel discussion on "The World We Speak of and the Language We Live In," featuring Putnam; Van Fraassen; Robert B. Barrett Jr., Ph.D., and Joseph Ullian, Ph.D., WU professors of philosophy. Chaired by Alfred J. Stenner III, Ph.D., WU associate professor of philosophy.

Saturday, 2 to 3:30 p.m. — Informal discussion with Putnam in Hurst Lounge, Duncker Hall.

Saturday, 4 to 5:30 p.m. — Informal discussion with Van Fraassen in Hurst Lounge.

Richard Rudner, Ph.D., was a professor of philosophy at WU. He came to the University in 1962 as chairman of the philosophy department and retired from that position in 1970, continuing as professor until his death in July 1979.

The symposium is partially funded by a grant from the Franklin J. Matchette Foundation.

Italian guitarist to perform Feb. 28

Italian guitarist Oscar Ghiglia will make his third appearance in St. Louis at 8 p.m. Friday, Feb. 28, in Graham Chapel. Ghiglia's appearance is co-sponsored by the Department of Music and the St. Louis Classical Guitar Society.

Born in Livorno, Italy, Ghiglia made his professional debut in 1982 at the Festival of Two Worlds in Spoleto, Italy. The following year, he won first prize at both the International Guitar Competition in Paris and at Santiago de Compostela in Spain. He has since toured Europe,

North and South America, New Zealand and Australia.

His St. Louis program will include works by Ferdinand Sor, Joaquin Turina, Manuel Ponce and Heitor Villa-Lobos.

On Sunday, March 2, he will teach a master class from 1 to 4 p.m. in Blewett B-8. Admission to the master class is \$5.

Tickets to the performance are \$8 to the general public, \$5 to students. Tickets are available at Ticketmaster outlets, by calling Dialtix (421-1400) or at the door.

CALENDAR

LECTURES

Thursday, Feb. 20

9:30 a.m. Campus Computer Store Seminar, "Desktop Publishing," Lambert Lounge, Mallinckrodt Center. For more info., call 889-5394.

1:10 p.m. George Warren Brown School of Social Work Colloquium, "The Hearing Impaired as a Culture/Minority and Social Workers," Marie Ayler-Graves, social service dept., Barnes Hospital. Brown Hall Lounge.

4 p.m. Dept. of Chemistry Seminar, "DNA Photolesions: Synthetic and Structural Studies," John Taylor, WU asst. prof. of chemistry. 311 McMillen.

4 p.m. Public Affairs Thursday Series, "Presidential Pre-Nomination Politics: 1984 Leading to 1988," William Crotty, prof. of political science, Northwestern U. Eliot 200 C & D.

4 p.m. Psi Chi Lecture, "The Nature of Mental Illness," Thomas Szasz, author of *The Myth of Mental Illness*. Graham Chapel. For more info., call 889-4620.

7:30 p.m. WU Black Law Students Association Panel Discussion, "Implementation of the St. Louis Schools' Desegregation Program: Is it Working?" 316 Mudd Hall.

8 p.m. Dept. of English Colloquium, "'American' Literature in the Renaissance: Its Metamorphoses," Daniel Shea, WU prof. of English. Hurst Lounge, Duncker Hall.

Friday, Feb. 21

4 p.m. Dept. of Romance Languages and Literatures Lecture, "What Made Montaigne Modern?" Jules Brody, chairperson, dept. of romance languages and literatures, Harvard U. Women's Bldg. Lounge.

4 p.m. Dept. of Music Lecture Series, "The Computer as a Musical Instrument," Richard O'Donnell, director, WU Percussion Ensemble. Blewett B-8.

4 p.m. Dept. of Philosophy Lecture, "Is Conceptual Relativity Incoherent?" Hilary Putnam, prof. of philosophy, Harvard U. Steinberg Aud.

8 p.m. Dept. of Philosophy Lecture, "What Are Laws of Nature?" Bas Van Fraassen, prof. of philosophy, Princeton U. Steinberg Aud.

8:30 p.m. Hillel House Lecture, "Jewish Civil War? The Religious/Secular Tension in Israel," David Grossman, Israeli author. Also sponsored by American Zionist Youth Foundation and American Zionist Federation. Hillel House, 6300 Forsyth Blvd.

Saturday, Feb. 22

9:30 a.m. African and Afro-American Studies Forum, "Where Do We Go From Here? Blacks in the Domestic Economy," David H. Swinton, director, Southern Center for Studies of Public Policy; and Robert L. Woodson, president, National Center for Neighborhood Enterprises. Cabanne Branch Library Aud., 1106 Union Blvd.

10 a.m. Dept. of Philosophy Panel Discussion, "The World We Speak of and the Language We Live In," Hilary Putnam, prof. of philosophy, Harvard U.; Bas Van Fraassen, prof. of philosophy, Princeton U.; Robert

Barrett and Joseph Ullian, both WU profs. of philosophy. Steinberg Aud.

11 a.m. University College Saturday Seminar, "Truth Seekers and Storytellers," Wayne Fields, WU assoc. prof. of English. Women's Bldg. Lounge.

1-5 p.m. Asian Art Society Symposium on Indian Arts. Jefferson Memorial Bldg. Aud. in Forest Park.

Sunday, Feb. 23

2:30 p.m. Asian Art Society Symposium, "Kshuan Sculpture From Gandhara and Mathura," Stanislaw Czuma, curator of Indian and Southeast Asian Art at the Cleveland Museum of Art. St. Louis Art Museum Aud. in Forest Park.

8 p.m. Hillel House Lecture, "The Media in Israel: Perceptions by Government and the Public," David Grossman, Israeli author. Also sponsored by WU Israel Action Committee. Shepley dormitory lounge.

Monday, Feb. 24

2 p.m. Dept. of Chemical Engineering Seminar, "The Kinetic Theory of Polymeric Liquids," John M. Wiest, doctoral candidate, U. of Wisconsin-Madison. 100 Cupples II.

4 p.m. Dept. of Psychology Colloquium, "Pursuing Developmental Psychopathology: In Search of a Meaningful Relationship with a Research Model," Jon Rolf, National Institute of Mental Health, Rockville, Md. 102 Eads.

4 p.m. Dept. of Biology Seminar, "Why Are There So Many Species of Neotropical Plants?" Alwyn Gentry, Missouri Botanical Garden. 322 Rebstock.

4 p.m. Dept. of Otolaryngology Richard A. and Betty H. Sutter Visiting Professorship in Occupational Medicine Lecture, "Vestibular and Oculomotor Disorders Caused by Industrial Solvents," Lars M. Odkvist, assoc. prof. of otolaryngology, Linköping U., Linköping, Sweden. Clopton Aud., Wohl Clinic Bldg., 4950 Audubon.

8 p.m. School of Architecture Lecture Series, "Landscape in the Transitional Ages," Yasimitsu Matsunaga, WU visiting professor of architecture. Steinberg Aud.

Tuesday, Feb. 25

9 a.m. 10th Annual Eli Robins Visiting Lecture, "Memory and the Brain," Larry R. Squire, prof. of psychiatry, U. of California-San Diego. West Pavilion Amphitheatre, Barnes Hospital Plaza.

Noon. WU Medical Center Employee Irene Walter Johnson Rehabilitation Institute Employee Fitness Program Lecture Series, "Flexibility and Stretching Clinic." Fifth floor track, IWJ Rehabilitation Institute, 509 Euclid Ave.

Wednesday, Feb. 26

11 a.m. Assembly Series Lecture, "Islamic Thought in the Contemporary World," Seyyed Hossein Nasr, an expert on contemporary Islam. Graham Chapel.

3:10 p.m. Law School Judicial Lecture/Demonstration Series, "Anatomy of a Lawsuit: Appellate Argument." Mudd Hall Courtroom. A reception hosted by the Black Law Students Association to honor area black judges follows in Gudder and Foote lounges.

Continued on p. 4 3

CALENDAR

Feb. 20-March 1

Continued from p. 3

7 p.m. Fellowship of Christian Athletes Lecture with Kurt Allerman, former St. Louis Cardinal football player. Graham Chapel.

Thursday, Feb. 27

2:30 p.m. Dept. of Mechanical Engineering Colloquium, "The Application of Adaptive Mesh Refinement to Shape Optimization of Plate Structures," Mark E. Botkin, research engineer, engineering mechanics dept., General Motors Research Laboratories, Warren, Mich. 100 Cupples II.

4 p.m. Literature and History Program Lecture, "Swift in Ireland," David W. Hayton, reviews editor, Parliamentary History, and course tutor, The Open University. Hurst Lounge, Duncker Hall.

4 p.m. Dept. of Anatomy and Neurobiology 11th Annual Mildred Trotter Lecture, "The Macrophage as a Secretory Cell," Zena Werb, prof. of anatomy and cell biology, U. of California School of Medicine at San Francisco. Carl V. Moore Aud., 4580 Scott Ave.

4 p.m. Dept. of Chemistry Seminar, "Photochemical Redox Reactions of Vanadium (II) and Molybdenum (III) Complexes," Andrew Maverick, WU asst. prof. of chemistry. 311 McMillen.

4 p.m. Public Affairs Thursday Series, "Pols, Polls and Parties: An Assessment of Black Politics," Eddie N. Williams, president, Joint Center for Political Studies, Washington, D.C. Eliot 200 C & D.

4 p.m. Dept. of Earth and Planetary Sciences Seminar, "How the Annealing of Fission Tracks Can Be Used to Improve Our Understanding of Geological Material," Charles Naeser, U.S. Geological Survey, Denver, Colo. 102 Wilson.

Friday, Feb. 28

2:30 p.m. Dept. of Engineering and Policy Seminar, "Wind Energy and Its Policy," V. H. Hohenemser, WU prof. emeritus of mechanical engineering. 104 Lopata.

4 p.m. Dept. of Music Lecture Series, "Brahms' Knowledge of Early Music and His Debt to Schutz," Virginia Hancock, WU visiting assistant professor of music. Blewett B-8.

PERFORMANCES

Friday, Feb. 21

8 p.m. Edison Theatre Presents the St. Louis Repertory Dancers. (Also Sat., Feb. 22, at 8 p.m. and Sun., Feb. 23, at 3 p.m.) General admission is \$10; WU faculty, staff and senior citizens, \$8; and students, \$5. For more info., call 889-6543.

Monday, Feb. 24

8 p.m. Inter-Varsity Christian Fellowship Presents Habakkuk, a multimedia event bringing the message of the Biblical prophet forward into the 20th century. Edison Theatre. (Also Feb. 25-27, same time, Edison.) Tickets are \$2.50 in advance at Edison box office and \$3 at the door.

Saturday, March 1

8 p.m. Edison Theatre Presents Anna Russell, the "crown princess of musical parody." General admission \$15; WU faculty, staff and senior citizens, \$10; and students, \$7. For more info., call 889-6543.

MUSIC

Sunday, Feb. 23

7 p.m. Dept. of Music Symphonic Winds in Concert. St. Louis Art Museum Theatre.

Friday, Feb. 28

8 p.m. Classical Guitarist Oscar Ghiglia will perform at Graham Chapel. Co-sponsored by the Department of Music and St. Louis Classical Guitar Society. General admission is \$8; students and senior citizens, \$5.

EXHIBITIONS

"Photos by Number: Interplanetary Space Photography." Images obtained through NASA's Regional Processing Lab at WU. Through March 9. Gallery of Art, lower gallery. 10 a.m.-5 p.m. weekdays; 1-5 p.m. weekends. For more info., call 889-4523.

"19th-century Art From the Permanent Collection." Through April 13. Gallery of Art, upper gallery. 10 a.m.-5 p.m. weekdays; 1-5 p.m. weekends. For more info., call 889-4523.

"Robert Cottingham: The Barrera-Rosa's Series." Through March 2. Gallery of Art, lower gallery. 10 a.m.-5 p.m. weekdays; 1-5 p.m. weekends. For more info., call 889-4523.

"The Eighth Annual High School Art Competition." Through Feb. 23. Bixby Gallery, Bixby Hall. 10 a.m.-4 p.m. weekdays; 1-5 p.m. weekends.

"Pierre de Ronsard (1524-1585): An Exhibit of Books and Papers Commemorating the 400th Anniversary of the Poet's Death." Through Feb. 28. Olin Library, Special Collections, level 5. 8:30 a.m.-5 p.m. weekdays.

"New York Art Directors Exhibit." March 1-16. Bixby Gallery, Bixby Hall. 10 a.m.-4 p.m. weekdays; 1-5 p.m. weekends.

FILMS

Thursday, Feb. 20

7 and 8:45 p.m. WU Filmboard Series, "Promised Lands." \$2. Brown Hall.

Friday, Feb. 21

7 and 9:30 p.m. WU Filmboard Series, "Diva." \$2. Brown Hall. (Also Sat., Feb. 22, same times, and Sun., Feb. 23, at 7 p.m., Brown.)

Midnight. WU Filmboard Series, "Monty Python Live at the Hollywood Bowl." (Also Sat., Feb. 22, same time, and Sun., Feb. 23, at 9:30 p.m., Brown.)

Monday, Feb. 24

7 and 9:30 p.m. WU Filmboard Series, "All About Eve." \$2. Brown Hall. (Also Tues., Feb. 25, same times, Brown.)

7 p.m. WU Libraries Bookmark Society Literary Cinema Series, "La Bete Humaine" (The Human Beast). Free. 215 Rebstock.

Wednesday, Feb. 26

7 and 8:45 p.m. WU Filmboard Series, "Le Jour Se Leve." \$2. Brown Hall. (Also Thurs., Feb. 27, same times, Brown.)

Friday, Feb. 28

8 and 10 p.m. WU Filmboard Series, "Sixteen Candles." \$2. Brown Hall. (Also Sat., March 1, same times, and Sun., March 2, at 7 p.m., Brown.)

Midnight. WU Filmboard Series, "Blade Runner." \$2. Brown Hall. (Also Sat., March 1, same time, and Sun., March 2, at 9 p.m., Brown.)

SPORTS

Friday, Feb. 21

7:30 p.m. Women's Basketball, WU vs. Principia College. Field House.

Saturday, Feb. 22

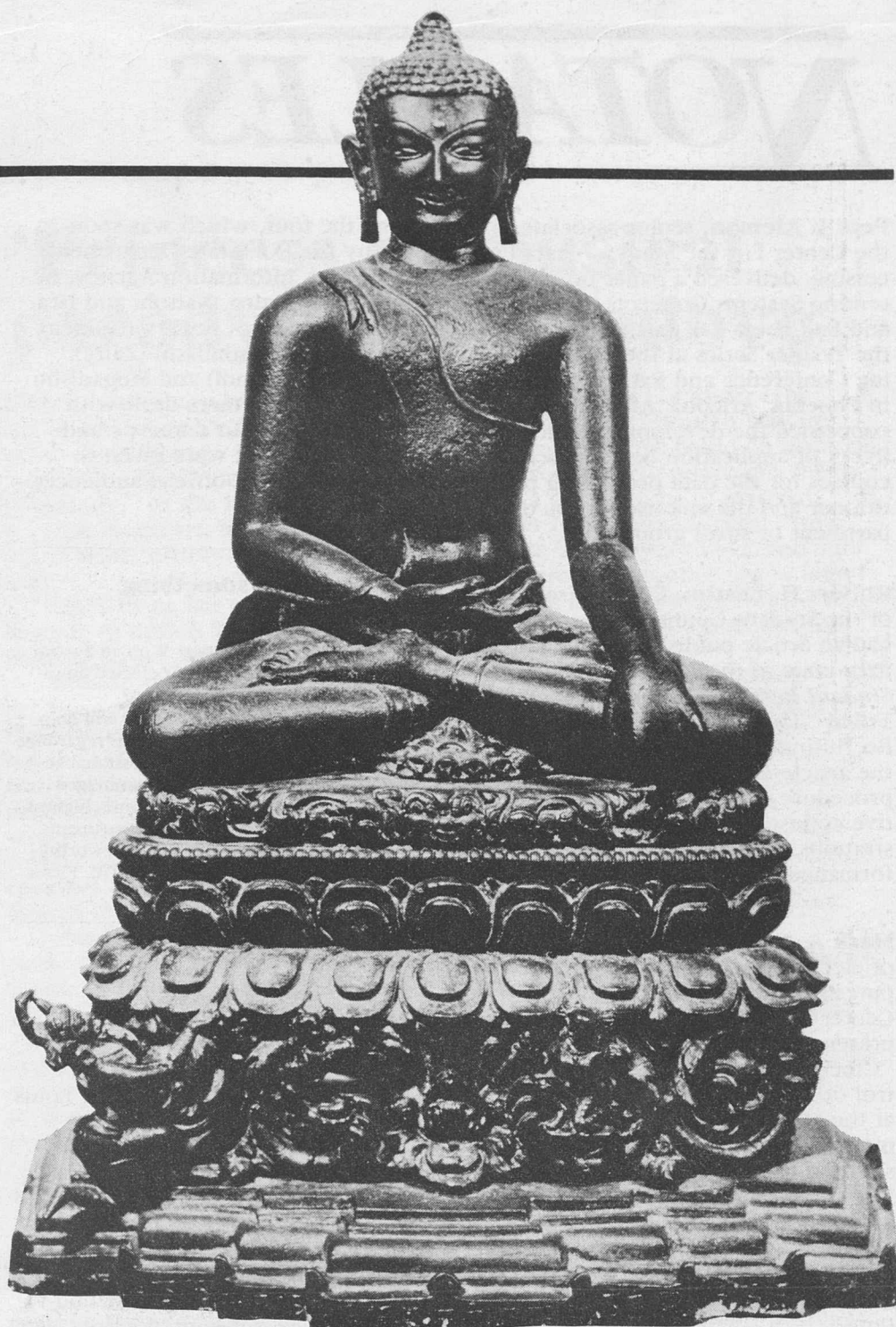
7:30 p.m. Men's Basketball, WU vs. Eureka College. Field House.

Tuesday, Feb. 25

7:30 p.m. Men's Basketball, WU vs. MacMurray College. Field House.

Wednesday, Feb. 26

11 a.m. Men's Tennis, WU vs. Central (Iowa) College. Tao Tennis Center.



Arts of India: This seated Buddha image from Bodhi Gaya, India, typifies the Buddhist sculptures of India that will be discussed at a symposium on Indian art from 1 to 5 p.m. Saturday, Feb. 22, in the Jefferson Memorial auditorium in Forest Park. The symposium, which concludes Feb. 23 with a 2:30 p.m. lecture on "Kshuan Sculpture From Gandhara and Mathura," is sponsored by WU's Asian Art Society. For more information, call 889-5156.

MISCELLANY

Thursday, Feb. 20

10 a.m.-noon. Personal Computing Education Center Short Course 002, "Computing Basics," Karen Sanders, computer specialist. Free to WU community. To register, call 889-5813.

Saturday, Feb. 22

9 p.m. Student Interfaith Partnership Against Hunger Dance. B-Vision, a local rock band, will perform. Open to WU community. The Gargoyle, Mallinckrodt Center. Donations are \$2. Proceeds will go to Operation Food Search.

Sunday, Feb. 23

6:30 p.m. COSMO International Club's International Night Dinner. Stix House, 6470 Forsyth Blvd. Advance admission for general public and WU community, \$3.50, and students, \$3. Tickets at the door cost 50 cents more.

Monday, Feb. 24

10 a.m.-3:30 p.m. Inter-Varsity Christian Fellowship presents a display "Ten Myths of Christianity" in the Mallinckrodt Center Gallery.

10 a.m.-noon. Personal Computing Education Center Short Course 221, "Doing Word Processing in CMS," Steve Middlebrook, computer specialist. (Also Feb. 25-27, same time.) Free to WU community. To register, call 889-5813.

1-3 p.m. Personal Computing Education Center Short Course 200, "Doing Word Processing with MUSIC/Script," Karen Sanders, computer specialist. (Also Feb. 25-28, same time.) Free to WU community. To register, call 889-5813.

4-6 p.m. Personal Computing Education Center Short Course 206, "Doing Statistics with SAS," Arbi Abdallah. (Also Feb. 25-28,

same time.) Free to WU community. To register, call 889-5813.

5:30 p.m. Gay and Lesbian Community Alliance Meeting. 125 Prince.

7:30-9 p.m. University College Short Course, "Mr. Halley and His Comet," Michael Friedlander, WU prof. of physics. 201 Crow. (Also March 3 and 10, same time, Crow.) Cost is \$40. To register, call 889-6759.

Tuesday, Feb. 25

9-11 a.m. Personal Computing Education Center Short Course 333, "Microcomputing — DOS Fundamentals," Pat Taylor, CSDP associate. (Also Feb. 26, same time.) Free to WU community. To register, call 889-5813.

Wednesday, Feb. 26

5:15-6:45 p.m. Campus Y Stress Management Class. Campus Y Lounge. Class to run from Feb. 26 to March 26 on Wednesdays. Cost is \$10 for full-time WU students; \$36 for Healthcare Network members, and \$45 for non-students.

Friday, Feb. 28

7:30 p.m. Inter-Varsity Christian Fellowship Meeting. "Where is the God of Heaven?" Rev. George Stulac, pastor of Memorial Presbyterian Church. Green Stuffs Line, Wohl Center.

Calendar Deadline

The deadline to submit items for the March 6-22 calendar of the *Washington University Record* is Feb. 27. 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. Address items to King McElroy, calendar editor, Box 1070.