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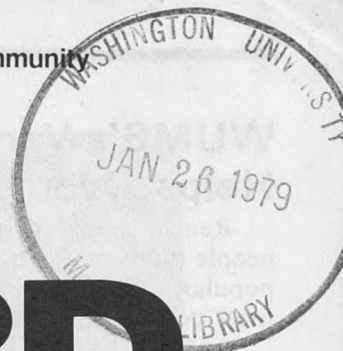
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W.U. RECORD

Engineering School Establishes Semiconductor Lab

Dean James M. McKelvey has announced the establishment of the Semiconductor Research Laboratory within the School of Engineering and Applied Science.

The director of the new laboratory, Professor Charles M. Wolfe, has been a member of the WU Department of Electrical Engineering since 1975.



Charles M. Wolfe

While at MIT's Lincoln Laboratory, Wolfe was the first to solve the materials technology problems for producing ultrapure gallium arsenide (GaAs). Wolfe's pioneering work has helped to make a number of practical electronic devices possible.

Gallium arsenide semiconductors may one day replace silicon semiconductors in many computer and communications applications which require decreased power consumption and increased switching speed. GaAs semiconductors, in certain applications, may be up to six times faster than similar silicon devices while requiring only one fourth the power.

Semiconductors are materials which act as conductors under certain conditions but as insulators under others.

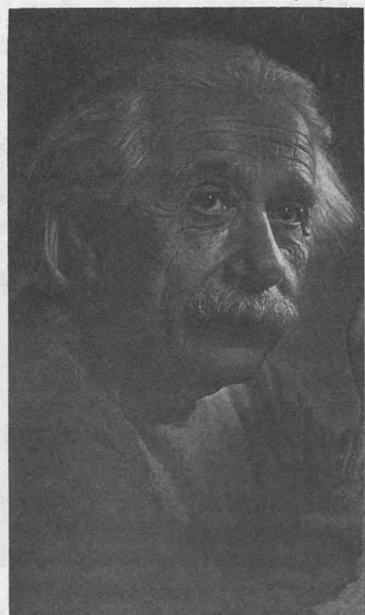
Wolfe described the major goals of the new laboratory as research aimed at "the next generation of useful GaAs devices. We are looking at some fairly sophisticated aspects of GaAs and devices made from GaAs," he said.

One long-range goal of GaAs research is the production of devices which combine electronic circuitry and lasers on a single integrated circuit chip. The chip would contain thousands of electronic circuits in addition to optical devices, yet it would be smaller than a thumbnail. Such a device could be incorporated into equipment that would provide navigational aid to airplane pilots.

"The Semiconductor Research Laboratory," Wolfe said, "will advance the solid-state engineering program in the Department of Electrical Engineering, which is already very strong."

It will also provide increased opportunities for graduate students to collaborate with interdisciplinary-

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An exhibit on Albert Einstein is currently at Olin Library. Photograph by Yousuf Karsh. (See Calendar)

Bells Are Always Ringing for Buildings and Utilities Department

If the occasional ringing of the phone jangles your nerves, imagine the effect of 24,000 calls a year—the number received annually by WU's Building and Utilities Department.

"Coping with the many calls and subsequent work orders



Vincent Head, superintendent of the WU Buildings and Utilities Department, and Doris Motley, payroll control board organizer, place work orders on their "work control board."

isn't easy," said Vincent Head, superintendent of Buildings and Utilities (previously the Maintenance Department), "but we do it through careful planning and scheduling, coupled with the efforts of the 69 employees in our department."

All work orders received by the department are put on a "work control board" and work orders are assigned to employees by the foremen in the order in which they are received. The only exception to this is emergency calls for service that might cause damage to a building or person, Head said. These are dispatched immediately to employees handling emergency calls by a paging system. On the average, they complete about 100 work orders a day, ranging from removing contact lenses from drains to remodeling a building area.

Head, who has been at the University for 31 years, said when he started in the Maintenance Department in 1947, it had 12 employees, one telephone, and one used eight-year-old truck. "We had an inventory of about \$300 in tools and about \$1800 in material stock," he said. "Maintenance men were expected to be jacks of all trades during this period, and I must say we did a fair job with what we had. There were no sophisticated electrical or heating systems like there are today, and not one building had air-conditioning."

The department has come a long way since the time the University was called a "streetcar college." Today, every building has some type of air-conditioning or a modern combination heating and air-conditioning system. Over the years the amount of maintenance service has increased because of the number of additional buildings and new departments. The

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WUMS's Vanpooling Saves Money, Helps Overcome Parking Shortage

Remember the gasoline shortage in 1973-1974? It started people thinking about the price of commuting. Carpools were popular; at least popular to talk about. But that wore off and most people went back to the one-occupant commuter car.

At the WU School of Medicine (WUMS) another shortage has forced people to re-think their means of commuting. This time it's a parking shortage.

The basic problem is an increasing demand for a limited number of parking spaces. One obvious solution to the problem was to have fewer cars to park. An idea that has worked in other cities was company-sponsored vanpools.



WUMS's vanpoolers unload. The vanpooling project was begun in the spring with the help of a federal grant.

WUMS received a grant last spring from the Federal Aid to Urban Systems Programs to institute a pilot vanpooling program. There are now three vanpools on the road, bringing a total of 28 persons to work each day.

Under the terms of the grant, the school purchases 12-passenger vans to be driven by an employee-coordinator who is selected from applicants. The coordinator recruits interested persons living in close proximity to each other and has the responsibility of establishing a route and billing the passengers, as well as the full-time care of the van. For these services, he or she gets free transportation and permission to use the van (at cost) for personal purposes.

Vanpool participants list saving money and convenience as reasons for joining a vanpool, said Lori Dales, parking coordinator, who administers the program on a day-to-day basis. She and Robert Hickok, assistant vice chancellor for medical affairs, have been closely monitoring the project.

Many participants have changed from being a two-car family to having just one car, Dales said. This cuts down on a lot of costs, but even if a second car is kept, insurance costs are reduced 10 to 30 per cent when it isn't driven to work. Maintenance costs and gasoline are also saved by vanpooling, Dales said.

Usually the cost of the work trip is absorbed by one individual. The daily commuting cost of a 30-mile round trip in a standard-size car, including maintenance, parts and tires, gas and oil, insurance, taxes and parking, is about \$5.70, according to Federal Highway Administration statistics, Hickok said. Based on a 21-day work month, the monthly commuting cost is around \$119. A compact car costs about \$4.47 a day and almost \$94 a month for a 30-mile-a-day trip, he said, adding that the cost per person for vanpooling for the same round-trip mileage is \$1.39 a day, or \$29.19 a month.

There are non-economic benefits to vanpooling as well, Dales pointed out. These include reduced risk and tension of commuting, availability of a car for use by other family members, assured transportation to work if the supply of gasoline becomes limited, door-to-door service, preferred parking for

vans and the opportunity to read and socialize on the way to work.

The most immediate benefit of the WUMS vanpooling has been reducing the demand for parking spaces by 25, Dales said. Associated institutions have recently been invited to participate as passengers in the vanpooling program. "However, it was primarily established for the benefit of University employees," Hickok said.

The three operating vanpools come from Ballwin, Glen Echo/Bel Nor and Eureka/Fenton. Other coordinators are forming vanpools from St. Charles, Clayton, Des Peres and University City.

Those interested in joining a vanpool should call Lori Dales at 454-3065 for more information.

(Sharon Stephens)

Buildings

(continued from page 1)

Buildings and Utilities Department services the University seven days a week, 24 hours a day—Monday thru Friday 7:45 a.m. to 4:15 p.m. with a full crew; nights, weekends, and holidays with emergency crews only. The department is equipped with 14 trucks and tools worth about \$10,000 and includes five specialized mechanic crafts—carpentry, electrical, painting, plumbing and air-conditioning. Employees are assigned work according to their skills. Last year the department spent approximately \$154,000 for parts and materials.

Due to budget cuts from 1972 to 1976, the work force was reduced, as well as such maintenance services as the interior painting of buildings every five years, exterior painting every four years, and the cleaning and repairing of venetian blinds and shades. These services are now done according to need and usage.

In reducing the maintenance services during this period, a Preventive Maintenance Program (the servicing of equipment on a regular schedule to prevent mechanical breakdowns) was initiated to reduce the number of service calls and to avoid as many mechanical breakdowns as possible. This year things look better. The Buildings and Utilities Department has approval to hire two additional employees, which should relieve some of the backlog of work.

In 1947, there were only 35 buildings on the campus to maintain; today there are 84 with unique equipment that needs frequent checking and servicing. Head urges that WU employees and students be patient with the Buildings and Utilities Department. "Our men want to do a good job. If something is wrong, call us. We will try to make it right," he said. "Most of the time we can come up with the answer or solution to the problem. Just give us a reasonable chance." (King McElroy)



Ladyhouse Blues, by Kevin O'Morrison and set in South St. Louis, will be performed at Edison at 8 p.m. Feb. 1. It is one of four winning plays chosen from 39 competing colleges for production at the regional American College Theatre Festival, being hosted by Edison Jan. 31-Feb. 3. (See Calendar)

Announcements

THE ST. LOUIS COUNCIL of the Experiment in International Living is seeking volunteer hosts for 1979. Each host provides room, board, and hospitality for a period of three to four weeks for one student. The visitors expect to be regarded as members of the host household, participating in activities and chores. Activities for the groups of visiting students are often arranged by the experiment. Hosts are welcome to participate in these activities. If you are interested in hosting a guest from abroad, call: Stix International House, 727-1199.

GRANT APPLICATIONS are now being solicited by the WU Committee on Cancer Research for research proposed for the present year. Awards can be made for amounts up to \$5000 for basic or applied research related to cancer. The awards, which are funded by the American Cancer Society, are especially intended for junior faculty members or research fellows who have no funds with which to carry out pilot studies. Applications are reviewed locally, and awards for meritorious projects are funded rapidly. For further information, write or call Dr. E. B. Brown, Office of Continuing Medical Education, Box 8063, School of Medicine, 454-3372.

THE WU DEPARTMENT of Sports and Recreation will sponsor a physical fitness program from January 29 through April 20. Emphasis is placed on cardiovascular endurance, muscle tone and flexibility, using carefully graded exercises along with progressive jogging to promote physical fitness. Each participant progresses at his own rate and prescribed exercise is based on individual capabilities. The

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program will be offered on Monday, Wednesday and Friday from 7:30 a.m. to 8:30 a.m. under the direction of Randy Rosenthal and from noon to 1 p.m. under the direction of Debbie Garland. The fee for the program is \$35. It can be paid at the Administrative Office in Francis Gymnasium. For more information and application forms, call Ext. 5140.

DAVID A. PETERS, WU associate professor of mechanical engineering, won the Pi Tau Sigma Gold Medal Award for 1978. Established by Pi Tau Sigma, the mechanical engineering honorary society, and the American Society of Mechanical Engineers (ASME), the award is presented each year to the outstanding young mechanical engineer in the nation within 10 years of graduation. Peters received BS and MS degrees at WU in 1969 and 1970 respectively. His PhD from Stanford in 1974 was in aeronautics and astronautics. In 1976, he received a U.S. patent for the design of a more stable helicopter rotor.

EDGAR H. LEHRMAN, WU professor of Russian, has been re-elected vice president of ATSEEL (Association of Teachers of Slavic and East European Languages). Lehrman's office is one of four college-level positions in the United States.

DAVID FELIX, WU professor of economics, has been named to the editorial board of *The Journal of Economic History*. His appointment will become effective this summer.

Semiconductor

(continued from page 1)

nary researchers on the main campus and the Medical School campus.

The research activities of the Semiconductor Research Laboratory are primarily government funded, with over \$225,000 in support for current projects coming from the Naval Research Laboratory, the Office of Naval Research and the Air Force Office of Scientific Research.



Andrea Palladio's Villa Rotonda, 1566-67, in Vicenza, Italy.

Palladio Exhibit Opens at Steinberg

"Palladio in America," an exhibition describing the work of Andrea Palladio, master Renaissance architect, and his influence on 18th- and 19th-century American architecture, will be on display at the WU Gallery of Art 'Sun., Jan. 28, through Sun., March 25.

Palladio, who was born in Italy in 1508 and died in 1580, is considered by some authorities to be the most influential architect in Western history.

His greatest influence was not on the architecture of his time, but on that of the 18th century, when his work and writings—based on classical Roman architecture—inspired much imitation and emulation in England and America.

Among the American landmarks that embody Palladian architectural ideals are Thomas Jefferson's University of Virginia campus and Monticello.

In St. Louis, the John B. Myers House in Florissant and the Hanley House in Clayton are among local buildings which are Palladian in style, particularly in their use of two-story, columned porches.

Featured in the exhibit are eleven meticulously crafted wooden models of Palladio's elegant and grand Italian country villas, townhouses, palaces and churches. Made recently in Italy, the models are intricately detailed and

range in size from 9 to 60 square feet.

"The models are a clear demonstration of Palladian principles," said *New York Times* architectural critic Ada Louise Huxtable in a review of the exhibit. "They instruct in Palladio's subtlety of proportions and his insistence on a pure geometry of architectural form. Their great elegance makes us aware of the intellectual humanism that creatively transformed classical archeology into something totally new called the Renaissance."

Also contained in the exhibit are books, photographs and panels of text which document the dissemination of Palladio's theories and motifs in the United States. A first edition of Palladio's profoundly influential work, *I Quattro Libri dell' Architettura* (*The Four Books of Architecture*), is on loan to the exhibit from the University of Missouri, Columbia.

A lecture series, which will be held in conjunction with the exhibit, is currently being organized.

The exhibit is being sponsored by the Washington University Gallery of Art and the School of Architecture. It is being circulated in the United States by the Centro Internazionale di Studi di Architettura Andrea Palladio of Vicenza, Italy, which originally sent it to the United States in 1976 for the Bicentennial celebration.

Calendar

January 26-February 1

MONDAY, JANUARY 29
11 a.m. Department of Civil Engineering Seminar, "Current Studies on Complementary FEM Formulations in Finite Strain Elasto-Plasticity," Satya N. Atluri, Georgia Institute of Technology, Atlanta. 100 Cupples II.

3:30 p.m. Department of Biology Seminar, "Control of Morphogenesis in *Volvox*," George Viamontes, WU doctoral candidate in biology. 322 Rebstock.

TUESDAY, JANUARY 30
4 p.m. Division of Biology and Biomedical Sciences Seminar, "A Role for the Catecholaminergic Pathway in Maintaining of the Synaptic Plasticity in Kitten Visual Cortex," Takuji Kasamatsu, prof. of biology, Calif. Inst. of Tech. Erlanger Auditorium, 4750 McKinley.

WEDNESDAY, JANUARY 31
11 a.m. School of Law "Quest for Equality" Lecture Series, "Public School Desegregation," Philip B. Kurland, prof. of law, U. of Chicago. Graham Chapel.

2 p.m. School of Law "Quest for Equality" Panel Discussion, "Public School Desegregation," with Philip Kurland; Frank L. Goodman, prof. of law, U. of Penn.; Kenneth S. Tollett, dir., Howard U. Institute for the Study of Educational Policy; the Honorable Wade H. McCree, Jr., Solicitor General of the United States; and Bruce LaPierre, WU assoc. prof. of law. Robert G. Dixon, Jr., WU prof. of law, moderator. Mudd Hall Courtroom.

3 p.m. George Warren Brown School of Social Work Colloquium, "Questioning Burnout Among Social Workers," David Gillespie, WU assoc. prof. of social work. Brown Hall Lounge.

4 p.m. Department of Romance Languages Lecture, "The Long Poem (Epic) in France: Toward a New Criticism," William Calin, prof. of French, U. of Ore. Hurst Lounge, Duncker Hall.

THURSDAY, FEBRUARY 1
10 a.m. COSMOS and International Office Exhibit and Sale of original Oriental art. Stix House. Feb. 1 and 2, 10 a.m.-5 p.m.

2:30 p.m. Systems Science and Mathematics Seminar, "The Existence of Lagrange Multipliers for Certain Non-Convex Allocation Problems," Rajan Suri, Div. of Applied Science, Harvard. 215 Cupples II.

4 p.m. Division of Biology and Biomedical Sciences Seminar, "Adaptive Significance of Tandem Duplications in Salmonella Chromosomes," John Roth, prof. of biology, U. of Utah. Erlanger Auditorium, 4750 McKinley.

4 p.m. Department of Chemistry Lecture, "The Radical Chase: Investigation of Some Elusive Radicals and Radical Ion Pairs," J.K.S. Wan, prof. of chemistry, Queen's University, Kingston, Ontario. 311 McMillen Lab.

8 p.m. Schools of Continuing Education and Fine Arts "Meet the Artist" Series, with Heikki Seppa, metalsmith and WU assoc. prof. of art. Seppa will give a retrospective slide presentation of his work, tracing its development and philosophical focus. Steinberg Auditorium. Admission \$3; \$1.50 for the WU community. A wine and cheese reception will follow the lecture.

Films

FRIDAY, JANUARY 26
8 p.m. Office of Student Activities American Film Series, "His Girl Friday," with Rosalind Russell, and "The More the Merrier," with Jean Arthur. Rebstock Auditorium. Admission \$1.50.

8 and 10:15 p.m. WU Filmboard Series, "Kentucky Fried Movie," Brown Hall Theatre. Admission \$1.50. (Also Sat., Jan. 27, same times, Brown; and Sun., Jan. 28, 8 p.m., Wohl Center.)

12 midnight. WU Filmboard Series, "O Lucky Man." Brown Hall Theatre. Admission \$1. (Also Sat., Jan. 27, midnight, Brown.)

SATURDAY, JANUARY 27
8 p.m. Office of Student Activities American Film Series, "The Good Fairy," with Margaret Sullavan, and "The Lady Eve," with Barbara Stanwyck. Rebstock Aud. Admission \$1.50.

SUNDAY, JANUARY 28
2 p.m. Chinese Cultural Association Film, "China: The Roots of Madness," a

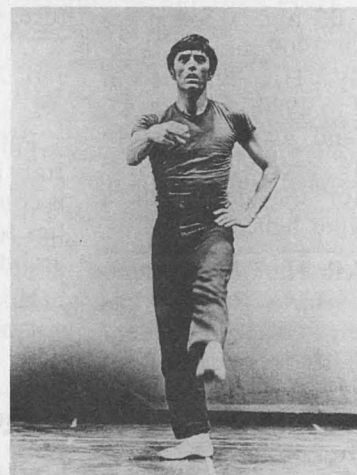
documentary on the history of China, 1839-1950. 215 Rebstock. Donations appreciated.

MONDAY, JANUARY 29
7:30 and 9:45 p.m. WU Filmboard Series, "The Heart is a Lonely Hunter." Brown Hall Theatre. Admission \$1.50. (Also Tues., Jan. 30, same times, Brown.)

WEDNESDAY, JANUARY 31
7:30 and 9:30 p.m. WU Filmboard Series, "La Strada." Brown Hall Theatre. Admission \$1.50. (Also Thurs., Feb. 1, same times, Brown.)

Performing Arts

FRIDAY, JANUARY 26
8 p.m. Edison Theatre Dance Series, with Daniel Nagrin, dance soloist. Edison Theatre. Admission \$4.80; \$3.75 for WU faculty, staff and area students; \$2 for WU students. Tickets available at Edison Theatre Box Office. (Also Sat., Jan. 27, 8 p.m., Edison.)



Daniel Nagrin

SUNDAY, JANUARY 28
3 and 7:30 p.m. Hillel Foundation Theatrical Performance, "Jewish Encounter Theatre," performed by Sally Fox, dramatist. Fox produces one-woman plays, often requiring audience participation, based upon Jewish issues. Hillel House, 6300 Forsyth. Admission \$2.50; \$1 for students.

WEDNESDAY, JANUARY 31
8 p.m. American College Theatre Festival, during which the best theatrical productions of four Midwestern colleges will be presented. Edison Theatre. Admission \$3; \$2 for WU faculty, staff and all students. Subscription tickets for all four performances, \$8. Tickets available at Edison Theatre Box Office. (Also Thurs., Fri. and Sat., Feb. 1-3, 8 p.m., Edison.)

Music

SUNDAY, JANUARY 28
3 p.m. Department of Romance Languages Harp and Violin Recital, with Jacques and Gail Israelievitch, performers. Hurst Lounge, Duncker. Admission \$5; No charge for members of the Alliance Francais, cosponsor.

WEDNESDAY, JANUARY 31
8 p.m. Department of Music Faculty Saxophone Recital, with Bill Archer, arranger, teacher and clinician, soloist. Graham Chapel.

Exhibitions

Washington University School of Fine Arts High School Art Competition Exhibit. Selected entries will be on display. Bixby Hall Gallery. 9 a.m.-5 p.m., Mon.-Fri. Through Feb. 4.

"Drawings and Projects," an exhibit of works by contemporary Italian architect Franco Purini. WU School of Architecture, Givens Hall, main level. 8 a.m.-8 p.m., Mon.-Fri. Through Feb. 5.

"Palladio in America," WU Gallery of Art, Steinberg Hall, lower level. 9 a.m.-5 p.m., Mon.-Fri.; 1-5 p.m., Sat., Sun. Jan. 28-March 25. (See page 3)

"Albert Einstein: Founder of a New Era in Physics, 1879-1955," an exhibit of monographs and journals, containing Einstein's most influential articles, displayed in commemoration of the 100th anniversary of his birth. Olin Library, level three. 8 a.m.-12 midnight, Mon.-Thurs.; 8 a.m.-8 p.m., Fri.; 9 a.m.-10 p.m., Sat.; and 11 a.m.-12 midnight, Sun. Through Feb. 1.

"Deaf Education to the Mid-19th Century," an exhibit composed of items from the Central Institute for the Deaf's Max A. Goldstein Collection in Speech and Hearing. The display will include some of the most historically well-known books on deaf education, dating from the early 17th to mid-19th century. WU Medical School Library Annex, 615 S. Taylor. 8:30 a.m.-5 p.m., Mon.-Fri. Through March 15.