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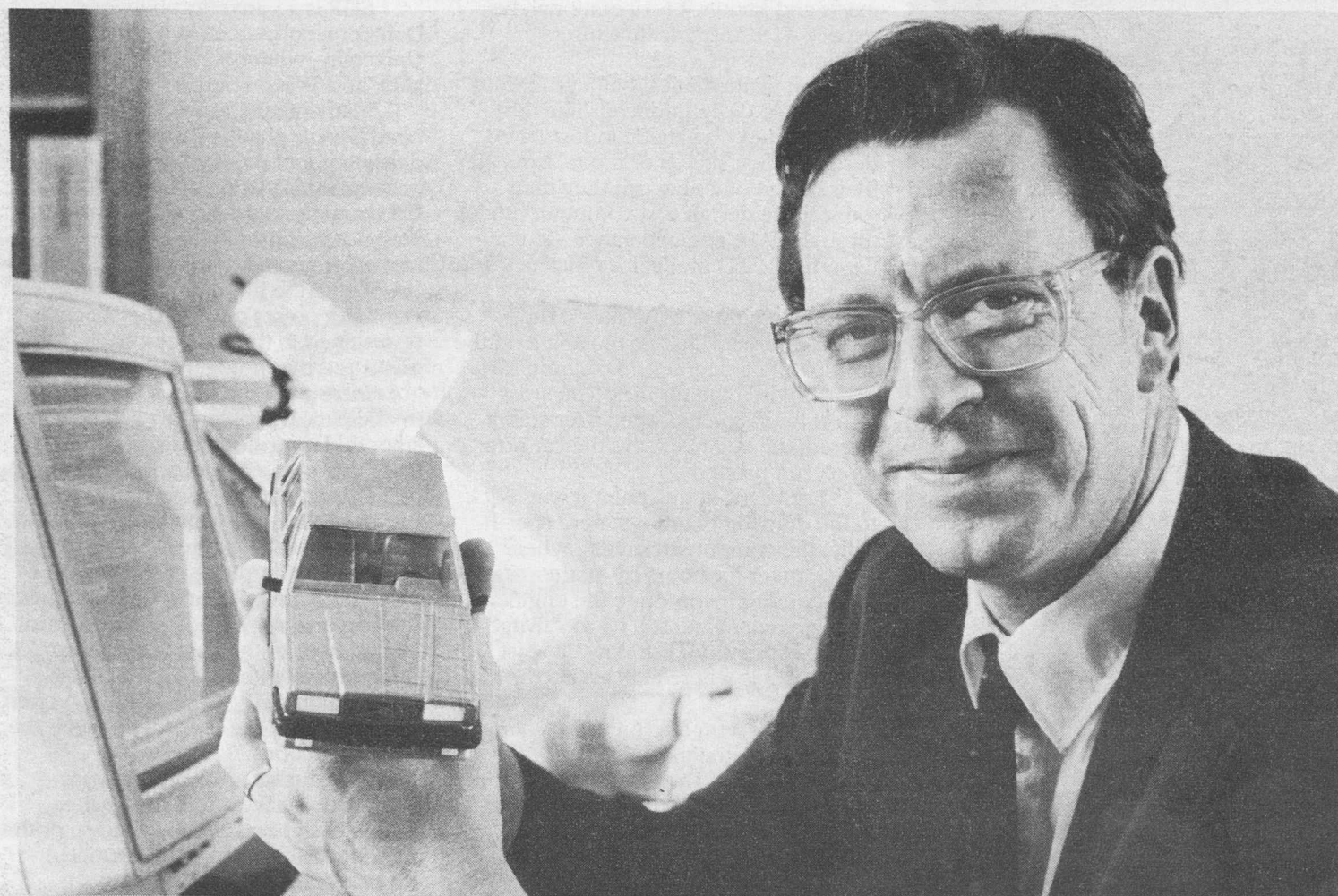
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RECORD

Washington
WASHINGTON UNIVERSITY IN ST. LOUIS

Vol. 12 No. 31/May 12, 1988



Bjorn Dahlberg, Ph.D., visiting professor of mathematics, has developed a math formula that is a shortcut to automobile design. The Volvo Corp. is integrating the formula into its design philosophy.

From two weeks to eight minutes

Novel math formula is shortcut to auto design

The interplay between artists and engineers in automobile design can be as testy a relationship as that of actor to director, writer to editor.

There is a natural conflict between the two disciplines as the artist tries to convey his vision of the product, the engineer his practical logistics. Reluctant to give in, each side claims propriety. Egos are bruised, feelings are hurt, tensions rise, precious time is lost.

While it may seem that the root of the conflict would require the interpretation of a psychologist, Volvo Corp. of Gothenburg, Sweden, one of the world's premiere automobile manufacturers, turned instead to a mathematician.

Bjorn Dahlberg, Ph.D., visiting professor of mathematics at Washington University, has developed a novel mathematical formula for automobile design that has cut the revision time needed for a team of artists and engineers to design a car from two weeks to just eight minutes, according to Volvo tests.

Called SLIP, a Swedish acronym for "polish," the concept is revolutionary in the field of automobile design, and so far is the exclusive domain of Volvo.

SLIP has passed the experimental stage at Volvo, and presently is being integrated with the corporation's computer-aided design (CAD) technology. After the computer software is smoothly formatted and employees become trained on the system, SLIP is expected to be fully deployed at Volvo in two to three years.

"SLIP is the conduit to an artful blend of geometry and engineering," its inventor says. "It is a mathematical compromise between two disciplines that is intended to eliminate much of the repetition leading to major bottlenecking in automobile design."

Because SLIP eliminates wasted time, design teams will be able to

develop more models and make infinitely more revisions in their quest to create the best models possible, Dahlberg says.

Volvo issued a final report on the testing of the SLIP concept in March. Says Lennart Johansson, manager of computer-aided engineering in the corporation's product design department: "With the use of SLIP, the time spent on the (original) design of automobile surfaces will be cut by 90 percent, and the total time reduced in the entire design process, including

numerous revisions, will be at least 25 percent. This will cut down expenses at Volvo and greatly increase the quality of our product."

Although American automobile manufacturers rely heavily on computer technology in design and production of automobiles, it isn't likely they will incorporate the concept immediately, Dahlberg says, noting that American manufacturers may be hesitant to adapt such a novel idea. But, he says, once the American industry realizes the concept

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Seven honorary degrees to be awarded

Washington University will award seven honorary degrees at its 127th annual Commencement ceremony, which begins at 8:30 a.m. on Friday, May 20, in Brookings Quadrangle. There are 2,100 degree candidates. Of the candidates, 1,087 are undergraduate students and 1,013 are graduate students.

The Commencement speaker, former U.S. Sen. Thomas F. Eagleton, will receive a doctor of laws degree. Eagleton, a 1953 cum laude graduate of the Harvard Law School, was elected to three consecutive terms in the Senate. During his 18-year congressional career, the St. Louis native served as Ranking Minority Member of the Senate Committee on Government Affairs and was a member of the Foreign Relations Committee and the Committee on Intelligence. In 1973, the Democrat from Missouri authored an amendment to halt the bombing in Cambodia, which was instrumental in bringing an eventual end to American intervention in Southeast Asia.

Eagleton was one of the principal authors of the War Powers Resolution, which reasserted the constitutional authority of Congress as the only branch

of government that can declare war. He also helped shape the Clean Water and Clean Air acts of 1971 and 1972. After his third term, Eagleton returned to St. Louis, where he joined Washington's faculty as University Professor of Public Affairs.

Bernard Bailyn, Adams University Professor at Harvard University and director of the Charles Warren Center for Studies in American History, will receive a doctor of letters degree. Bailyn is a Pulitzer Prize-winning author whose works focus on the history of the colonies, the American Revolution and the Anglo-American world in the preindustrial era. In 1968, he received the Pulitzer and Bancroft Prizes for his book *The Ideological Origins of the American Revolution*. He received the Pulitzer Prize in history and the Saloutos Award of the Immigration History Society for his 1986 book *Voyagers to the West*.

Bailyn, who has taught at Harvard since 1949, was the 1985 Lewin Distinguished Visiting Professor in the Humanities at Washington University. He received a bachelor's degree from

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Academy of Sciences elects Carl Frieden, Patty Jo Watson

Two Washington University researchers have been elected to the National Academy of Sciences. Election to the academy is considered by scientists to be second only to the Nobel Prize.

Carl Frieden, Ph.D., professor and interim head of biological chemistry at the School of Medicine, and Patty Jo Watson, Ph.D., professor of anthropology, are among 61 new members honored for their distinguished and continuing achievements in original research.

The academy, often described as the country's most prestigious honorary society for scientists, now has 1,540 members. Chartered by an act of Congress signed by President Lincoln in 1863, the academy promotes research beneficial to human welfare and officially advises the federal government on science and technology.

Washington University now has 21 faculty who are members of the National Academy of Sciences.

Frieden is director of the Medical Scientist Training Program at the School of Medicine and recently was appointed interim head of the Department of Biological Chemistry. He is best known for his research on the relationship between the three-dimensional structure of proteins and their function. Specifically, he is attempting to describe the kinetic properties of proteins that act as catalysts, and the strategy they use for speeding a reaction. He is also studying actin — an important protein found in all cells of the body — and its relation to certain cellular functions.

In 1986, Frieden was honored for his scientific contributions by receiving MERIT status for a \$1.2 million grant from the National Institutes of Health. MERIT (Method to Extend Research in Time) Awards provide long-term, uninterrupted financial support to



Carl Frieden



Patty Jo Watson

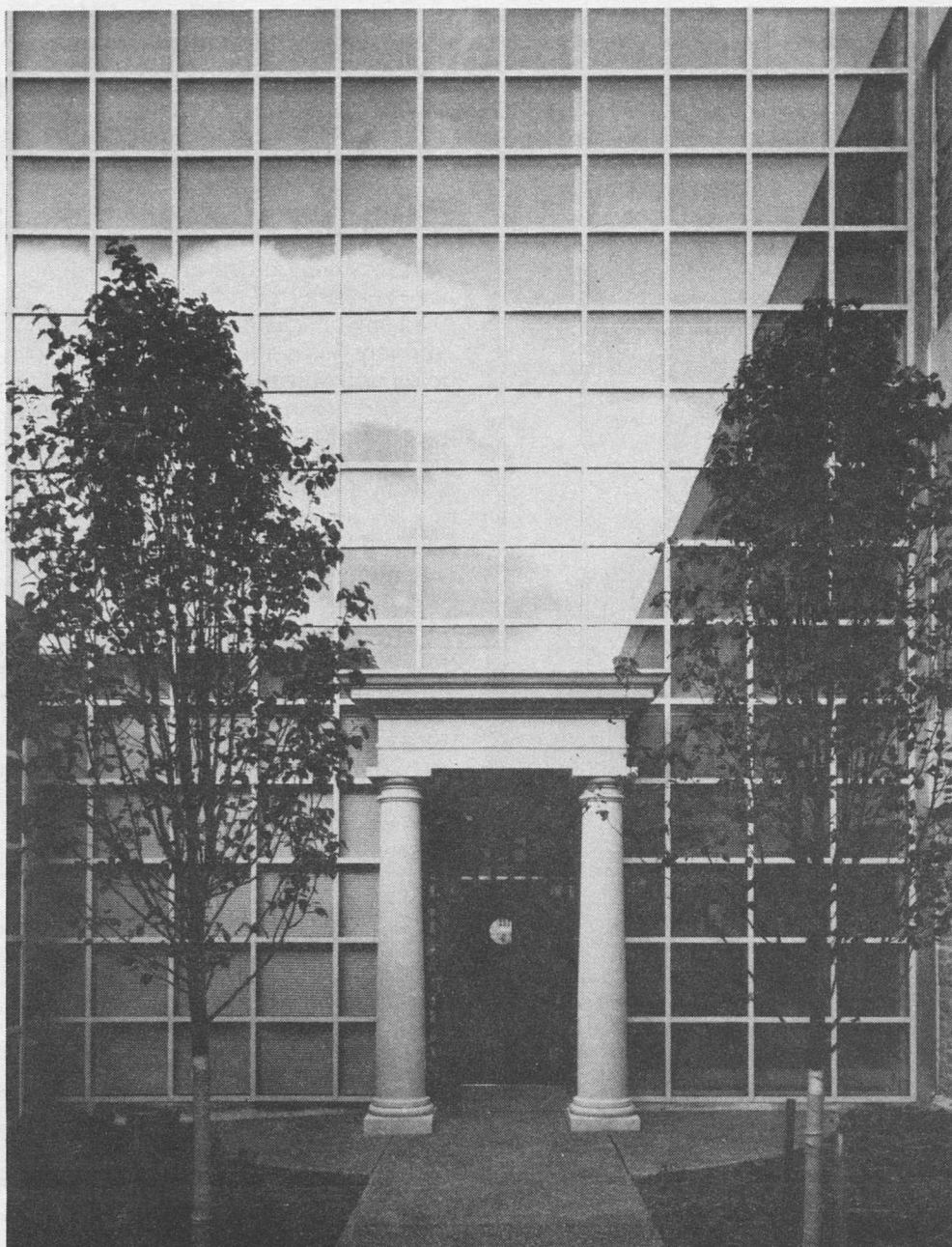
investigators who have demonstrated superior achievement during previous research projects.

Frieden came to Washington University in 1955 as a postdoctoral fellow, and joined the faculty in 1957 as an instructor in biological chemistry. He was named a professor in 1967.

He has served as a council member of the American Society of Biological Chemists and as an alternate council member of the American Chemical Society's Division of Biological Chemistry. He is also a member of the American Society of Cell Biology and the American Association for the Advancement of Science, and serves on the editorial board of *Biochemistry*. He has served on the editorial board of the *Journal of Biological Chemistry* and *Archives of Biochemistry and Biophysics*. He received the St. Louis Award of the American Chemical Society in 1976.

Frieden, who is co-author of more

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Above is the courtyard and entryway to Louderman Hall's new addition, which is part of the renovation that was recognized for architectural excellence.

Louderman Hall renovation recognized with award for architectural excellence

The recent renovation of Louderman Hall has been recognized for architectural excellence with the Construction Products Council/American Association of Architects Honor Award.

The prestigious award, given only once every three years, was one of two honor awards given in the Triennial Architectural Awards Competition held in St. Louis this spring. The other award went to Union Station.

Architect Thomas S. Harvath, of the St. Louis firm Ittner and Bowersox, designed the renovation and addition to Louderman Hall, which is part of the chemistry department complex. Harvath received a bachelor's degree and a master's of architecture degree from Washington University in 1972 and 1974, respectively.

Harvath's design included nuclear magnetic resonance (NMR) laboratories,

a three-story office addition, renovated chemistry and electronics laboratories and the landscaping of an overgrown courtyard.

The NMR laboratory design posed several unique problems for the architect, who had to exercise great care to ensure that the magnetic field generated by the NMR instruments would not be disturbed by nearby metal objects. The configuration was complicated because the space allocated for the laboratory lies between an elevator shaft and a machine room.

Jurors for the competition were Robert C. Broshar, an architect from Waterloo, Iowa; Gerald Horn, of Chicago, Ill.; and C. William Brubaker, principal of the architectural firm of Perkins and Will, which has offices in Chicago, New York and Washington, D.C.

'Murder in the Cathedral' auditions set

The Performing Arts Department invites members of the St. Louis community to audition for a production of T. S. Eliot's verse drama "Murder in the Cathedral." Auditions will be held by individual appointment from 7 to 10 p.m. on Monday and Tuesday, May 16 and 17. The drama will be presented Sept. 23-30 in Graham Chapel as part of the University's centennial celebration of the birth of the St. Louis-born poet.

"Murder in the Cathedral" tells the story of Archbishop Thomas Becket's martyrdom in Canterbury Cathedral in

1170 at the hands of henchmen of King Henry II. Nine male roles and five places in the female chorus are available. Rehearsals for those cast in the production will begin Aug. 22.

Auditioners will be asked to read from the script of "Murder in the Cathedral." Prepared monologues are not required. Scripts are available from the Performing Arts Department office, 315 Mallinckrodt Center.

Those interested in scheduling an audition are invited to inquire in person or by calling 889-5858.

Auto design — *continued from p. 1*

exists and knows it is operational, he expects U.S. auto manufacturers to become very interested.

The mathematical battleground of automobile design unravels like this: Highly trained, aesthetic industrial designers first sketch or model from clay their design of a new car; they then transfer the design to a computer model through CAD; engineers then examine the artists' CAD model for efficiency and practicality.

"An engineer may look at the model and say, 'change the angle on the window by 5 degrees,'" Dahlberg says. "This is when the fur flies. The artist thinks his vision has been irreparably altered; the engineer says the car now won't run properly."

For years, at this point it was 'back to the drawing board' — more specifically, the computer terminal, where artists tinker for hours by mathematical long-hand to incorporate the engineering parameters and still try to salvage artistic expression. But now, at least at Volvo, this is where SLIP enters the picture.

"The system interprets the changes needed in mathematical terms," Dahlberg says. "The aim is to make the iterative process of change automatic without the haggling and delays involved with the inevitable numerous changes that are inherent in design."

SLIP is a joint effort between Dahlberg, colleagues at Gothenburg University, where he holds a professorship, and Volvo scientists.

Mathematics comes into play in nearly every phase of automobile designing, but the common ground between artists and engineers is confined mainly to the hood, roof, trunk, and, not surprisingly, the dashboard, a marvel of geometry in all cars.

Using the hood as an example, Dahlberg points out that the Volvo hood is designed in three pieces, each one measured by photogrametric methods.

Measuring the pieces is a difficult mathematical problem of "getting a smooth description of discreet points," Dahlberg says. "The descriptions have to be geometrically perfect and still catch the flavor of what the artist wants."

Further, the surfaces have to be convex with a precise radius of curvature. If the artists' concept doesn't match the engineers' specifications, the artist can go back to the computer and attack the problem with the aid of SLIP.

Initially SLIP seems to have broken down some of the barriers between the warring factions.

"The artists and engineers are enthused to have a tool that makes design easier and also helps to smooth ruffled feathers," the mathematician says.

Tony Fitzpatrick

Eliot Honors recognizes seniors

A total of 385 graduating seniors will be honored for scholarship and leadership at Washington University's 33rd annual Eliot Honors Convocation at 2:30 p.m. Thursday, May 19, in the Athletic Complex Field House.

Jeffrey Samelson, an honors graduate of the College of Arts and Sciences, will give the student address. His lecture is titled "The Road Goes Ever On and On." Samelson, a member of Phi Beta Kappa, also is a member of Delta Phi

Alpha National Honor Society for German.

The convocation honors graduating students whose achievements in scholarship and service to the University have been recognized by honor organizations and by the academic divisions of the University. The ceremony is named in honor of the Rev. William Greenleaf Eliot, a Unitarian minister who was one of the founders of Washington University and chancellor from 1870 to 1887.

Board elects Biggs, Schipke; re-elects five trustees

Chancellor William H. Danforth has announced the election of two new trustees and the re-election of one former and four present trustees.

Newly elected trustees are John H. Biggs, president and CEO, Centerre Trust, St. Louis; and Roger W. Schipke, senior vice president and group executive, Major Appliance Business Group, General Electric Co., Louisville, Ky.

Biggs served as vice chancellor administration and finance for Washington University from 1977 to Feb. 1, 1984. He left the University to become president of Centerre Trust.

The re-elected former trustee is Robert J. Glaser, director for medical science at the Lucille P. Markey Charitable Trust in Menlo Park, Calif.

Re-elected present trustees are William E. Cornelius, president and CEO, Union Electric Co., St. Louis; Richard J. Mahoney, chairman and CEO, Monsanto Co., St. Louis; William E. Maritz, chairman of the board, president and CEO, Maritz Inc., Fenton, Mo.; and Roma Broida Witcoff, St. Louis.

RECORD

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NOTABLES

Deirdre Boden, Ph.D., assistant professor of sociology, recently participated in a panel discussion on "New Directions in Symbolic Interactionism" at the Midwest Sociology Society Meetings in Minneapolis.

Richard Colignon, Ph.D., assistant professor of sociology, delivered a paper, titled "Reification and the 'Natural' View of Organizations," at the Complex Organizations session of the Midwest Sociological Meetings, held in Minneapolis. He also was a discussant in a session, titled "Critical Approaches to Class and Social Structure."

Roy Curtiss III, Ph.D., George William and Irene Koechig Freiberg Professor of Biology and chairman of the biology department, gave the inaugural lecture, titled "Engineering Organisms for Safety: What is Necessary," at the First International Conference on the Release of Genetically Engineered Microorganisms, held April 5-8 in Cardiff, Wales. He also lectured at the Institut Pasteur, Paris, France, on "Use of Avirulent Salmonella to Evaluate Mechanisms of Bacterial Pathogenicity" and on "Recombinant Avirulent Salmonella Vaccines" at Rhone Merieux, Lyon, France.

Joseph Fields, M.D., Ph.D., assistant professor of radiology, delivered a paper on "Primary Tumors of the Trachea—Results of Radiation Therapy" at the 70th annual meeting of the American Radium Society, held April 16-20 in Seattle, Wash.

Mark A. Franklin, Ph.D., professor of electrical engineering and computer science; **Michael Miller**, Ph.D., professor of electrical engineering; and **Gruia-Catalin Roman**, Ph.D., professor of computer science, have received a National Science Foundation grant, titled "Equipment in Support of Parallel Processing Research." Monies from this grant, supplemented by additional funds from the University, have been used to purchase an NCUBE parallel processing computer. The computer consists of 64 individual processors configured in a hypercube topology. With a peak computational rate of about 128 MIPS (millions of instructions per second), it is the most powerful computer of its type in the area. It will be used as a research tool to investigate parallel algorithms for computer aided design, signal and image processing, and distributed operating systems.

Charles R. McManis, J.D., professor of law, moderated a panel discussion on medical malpractice at the Washington University School of Medicine on March

11. The discussion was sponsored and videotaped by the local chapter of the American Medical Student Association.

E. Thomas Sullivan, J.D., led a five-person team as chair of the American Bar Association/ Association of American Law Schools reinspection visit for the reaccreditation process of Case Western Reserve University Law School.

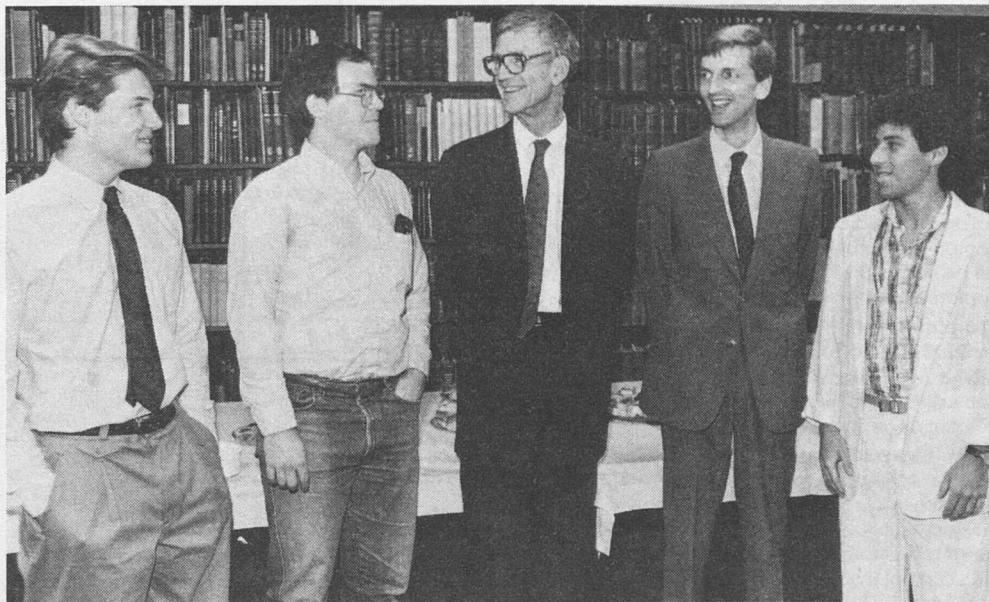
Robert L. Thorp, Ph.D., associate professor of art history, gave four lectures recently: "The Quin-Han Transformation" at Los Angeles County Museum of Art; "Underground Palaces and Longevity Mounds" at the Cleveland Museum of Art, both in conjunction with the exhibition "Quest for Eternity"; "Death and the Afterlife in Early Imperial China" at the Walters Art Gallery in conjunction with the exhibition "Stories From China's Past"; and "Reinventing the Past" at the Birmingham Museum of Art.

Michael D. Ward, chief technologist for quality assurance and director of technical education for Mallinckrodt Institute of Radiology, has been selected to be a Fellow of the American Society of Radiologic Technologists (ASRT). This honor is in recognition of outstanding contributions to the ASRT and to the profession of radiologic technology. He will receive the fellowship during the Honors Evening Awards Ceremony at the ASRT annual conference in Albuquerque, N.M., on June 12. Upon receiving the honor, Ward will be the youngest radiologic technologist to earn this distinction.

Robert L. Williams, Ph.D., professor of psychology and black studies, conducted a two-day workshop on culture and education for the Afro-American Studies Program at the University of New Mexico in Albuquerque on March 4-5. He also delivered the keynote address on "Assessment and Evaluation of Minorities" at the Chicago School of Professional Psychology's Cultural Impact Conference on March 19.

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.



Book collectors: Chancellor William H. Danforth presented awards to the four winners of the first annual Carl Neureuther Book Collection Competition during a recent ceremony in Olin Library. Pictured (from left) are: James M. Kellogg (first place, undergraduate category), whose collection was titled "19th-century Travel and Adventure in Africa"; Leland J. Scott (second place, graduate category) for "Scottish History and Culture, Medieval Emphasis"; Chancellor Danforth; James C. Robertson (first place, graduate) for "An Historian's Working Library"; and Alan Wiener (second place, undergraduate) for "Reading Art." First-place winners were awarded checks for \$1,000; second-place winners received \$250.

Dudukovic wins teaching award

Milorad P. Dudukovic, Ph.D., professor of chemical engineering, is the 1988 Chemical Manufacturers Association (CMA) National Catalyst Award Winner.

Dudukovic won the award, which includes a \$5,000 check, a medal and a citation, for his teaching excellence at Washington University. He was presented with the honor at the University's Engineering Century Club Annual Dinner Meeting, held April 28.

The CMA describes winners of the Catalyst Award as "professionals who have gone the extra mile, exhibiting a deep interest in their students, providing guidance, help and understanding far beyond the limited requirement of the institutional framework." The winners are selected based on a nationwide

competition involving teachers of chemistry and chemical engineering.

Dudukovic, a highly published scientist, has directed the University's Chemical Reaction Engineering Laboratory since 1974. He received his bachelor's degree in chemical engineering from the University of Belgrade, Yugoslavia, in 1967, and holds a master's (1970) and doctorate (1972) from the Illinois Institute of Technology.

In addition to the CMA Catalyst Award, Dudukovic has received other teaching honors. He was "Engineering Professor of the Year" at Washington in 1976, 1978, 1981, 1982 and 1986. In 1986, he also received the Burlington Northern Foundation Award for Excellence in Teaching.

Production places fifth at theatre festival

The Performing Arts Department's production of "The National Health: Or Nurse Norton's Affair," which was held last November in Edison Theatre, was recognized at the American College Theatre Festival. The performance placed fifth out of 72 entrants from Region 5-south, which includes Missouri, Iowa, Nebraska and Kansas.

Ann Marie Costa, director, and Jay Ferger, set designer, received special awards of commendation at the regional festival, held in Warrensburg, Mo. Costa, artist-in-residence at Washington, will

be directing the Performing Arts Department's production of Eugene O'Neill's "Desire Under the Elms" next season in Edison Theatre. Ferger recently designed the set for the well-received performance of Peter Shaffer's "Equus."

Matthew Hull, Tom Jaeger and Darren Oliviero, student actors in the production, were nominated for the prestigious Irene Ryan Award Competition given at the festival. Oliviero recently received critical acclaim for his portrayal of Alan Strang in "Equus."

Academy — continued from p. 1

than 100 publications on his research, received his bachelor's degree in chemistry from Carleton College in 1951 and his doctorate in chemistry from the University of Wisconsin in 1955.

The academy recognized Watson for 30 years of research into broad areas of anthropology, including the origin of horticulture in North America and the Near East, archaeological theory and ethnoarchaeology — the study of living groups of people to determine how human behavior contributes to archaeological sites.

Watson is well known for her work with artifacts left by people who used the wide-ranging cave systems of Kentucky and Tennessee some 4,000 years ago. She has reconstructed an extensive society from such findings as textiles, vegetable remains, charred food, gourd vessels, bones, hair and

actual mummified bodies.

A frequent speaker and consultant on anthropology, Watson is author of scores of scholarly articles and book reviews and author or co-author of eight books that are highly regarded by her peers. She is a member of the Cave Research Association, the National Speleological Society and a fellow of the American Association for the Advancement of Science.

Watson joined the Washington University faculty as assistant professor in 1969, becoming professor in 1973. Before that, she was a research associate and an instructor at Los Angeles State College, University of Southern California, the University of California/Los Angeles, and the University of Michigan. She holds a master's degree and doctorate from the University of Chicago.

NEWSMAKERS

Washington University faculty and staff make news around the globe. Following is a digest of media coverage they have received during recent weeks for their scholarly activities, research and general expertise.

Black people should be given psychological and aptitude tests designed specifically for them because current examinations are culturally biased toward Americans of European lineage, says Robert L. Williams, Ph.D., professor of psychology and black studies, in an article in the March 21 *Philadelphia Inquirer*. In the article Williams said, "It is time we begin to show sensitivity to black American

culture and stop trying to make black Americans conform to 'Anglo' test material and test biases." The item originated from an Associated Press wire story. Other papers using the story include the *Miami Herald*, *Dallas Times Herald* and the *Chicago Daily Southtown Economist*.

"Flying objects can lead to blindness if they hit the eye, either because of the impact or because what enters the eye is laden with bacteria that produce an intractable infection," says Anthony Lubniewski, M.D., assistant in ophthalmology (house staff), in the March 29 issue of *Newsday*.

CALENDAR

May 12-21

LECTURES

Thursday, March 12

Noon. The 35th Annual Alpha Omega Alpha Lecture, "Immunodeficiency From Hippocrates to AIDS," Fred Saul Rosen, James L. Gamble Professor of Pediatrics, Harvard Medical School. Clopton Amphitheatre. Pediatric Grand Rounds will be held at 9:15 a.m. Friday, May 13, also at the Clopton Amphitheatre.

1:10 p.m. George Warren Brown School of Social Work Colloquium, "Issues and Characteristics of Adult Survivors of Sexual Abuse," Stephen Jones, director of Marital and Family Training Program, Menninger Foundation at Topeka, Kan.

4 p.m. Eleventh Annual Oliver H. Lowry Lecture in Pharmacology with Pedro Cuatrecasas, senior vice president of research and development at Glaxo Inc., discussing the role of phosphoinositidylglycans in membrane anchoring and action of insulin. Carl V. Moore Aud., 660 S. Euclid Ave.

Friday, May 13

3 p.m. Dept. of Economics Time Series Seminar, "Consequences of Not Being Bayesian," Edwin T. Jaynes, Wayman Crow Professor of Physics at WU. 300 Eliot.

Monday, May 16

9 a.m.-5:15 p.m. The Second RIKEN-Washington University Symposium, "Signal Transduction and Intracellular Mediators." Carl V. Moore Aud., North Bldg., 4580 Scott Ave., 1st fl. (Also Tues., May 17, 9 a.m.-5:10 p.m., Carl V. Moore Aud.) For more info., call Karen Perks, 362-7072.

Tuesday, May 17

9 a.m.-noon. The James Barrett Brown Visiting Professor of Plastic Surgery Symposium, "Microsurgical Approaches to Problems in the Head and Neck," Kiyonori Harii, assoc. prof. of surgery, Faculty of Medicine, U. of Tokyo Hospital. West Pavilion Amphitheatre, tunnel level, Barnes Hospital.

4 p.m. The James Barrett Brown Visiting Professor of Plastic Surgery, "Advances in Microsurgery," Kiyonori Harii, assoc. prof. of surgery, Faculty of Medicine, U. of Tokyo Hospital. Barnes West Pavilion Aud.

PERFORMANCES

Monday, May 16

7-10 p.m. Auditions for T.S. Eliot's "Murder in the Cathedral" are being held by the Performing Arts Dept. (Also Tues., May 16, same time.) The drama will be presented Sept. 23-30 in Graham Chapel as part of the University's celebration of the centennial of the St. Louis-born poet's birth. Those interested in scheduling an audition are invited to inquire in person or by calling 889-5858.

MUSIC

Friday, May 13

8 p.m. Dept. of Music Presents Graduate Flute Recital with Christina Andrews, flute; Brian Shaw, piano; Ayako Watanabe, harp; and members of the Amici Quartet. Steinberg Hall.

Saturday, May 14

2 p.m. Dept. of Music Presents a Voice Recital with Wilson Bell, tenor. Traci Sanders, piano. Holmes Lounge.

Friday, May 20

7:30 p.m. Dept. of Music Presents Indian Music Concert featuring Usman Khan, Hindustani Sitarist. Holmes Lounge. General admission is \$10 for adults and \$5 for children age 5 or older; WU faculty, staff and students free; all other students, \$5.

EXHIBITIONS

"Permanent Collection." Through June 6. Gallery of Art, lower level. 10 a.m.-5 p.m. weekdays; 1-5 p.m. weekends. For more info., call 889-4523.

"Highlights From the Philip Mills Arnold Seismology Collection." Through July 31. Olin Library, Special Collections, level 5. 8:30 a.m.-5 p.m. weekdays.

"BFA Exhibition," works by WU bachelor of fine arts candidates. Gallery of Art, upper galleries. Through May 22. 10 a.m.-5 p.m. weekdays; 1-5 p.m. weekends. For more info., call 889-4523.

"The Core Exhibit," named for classes that comprise the basic or core requirements in the School of Fine Arts. The exhibit features the work of freshmen and sophomores. Through May 22. Bixby Gallery, Bixby Hall. 10 a.m.-4 p.m. weekdays; 1-5 p.m. weekends.

MISCELLANY

Friday, May 20

8:30 a.m.-8 p.m. Black Alumni Council sponsors Sixth Annual Black Alumni Reunion. (Also Sat., May 21, 9:15 a.m.-8 p.m.) For more info. and reservations, call the alumni office at 889-5208.

5:30 p.m. 1988 Distinguished Law Alumni Annual Dinner at the Omni International Hotel at Union Station. Attorney Lon Hocker, former Republican nominee for governor of Missouri and the U.S. Senate, and Edith Spink, mayor of Ladue, will be honored. To register for the dinner, call 889-5246.

Calendar Deadline

The deadline to submit items for the May 19-June 4 calendar of the Washington University Record is May 12. 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.

Commencement Activities

Friday, May 13

9 p.m. Friday the 13th Party, Part 127, senior toast, Bowles Plaza.

Saturday, May 14

7 p.m. Senior Night at the Ballpark, St. Louis Cardinals vs. Atlanta Braves. Busch Stadium.

Sunday, May 15

Noon-1:30 p.m. Alumni Senior Brunch. Sponsored by the Alumni Board of Governors and Student Alumni Relations Committee. La Cuisine, Wohl Center.

3 p.m. Senior Softball Game and Barbecue at law school field.

Monday, May 16

8 a.m. "Rafting on the River." Depart Mallinckrodt Center, front entrance.

9 p.m.-1 a.m. "Harry's Salute to '88," old time rock 'n' roll with Bill Clark and the St. Louis Browns. The Gargoyle, Mallinckrodt Center.

Tuesday, May 17

8:30 a.m.-5 p.m. Cap and Gown Pick-up. Lambert Lounge, Mallinckrodt Center.

7 p.m. "Party at the Station." Union Station Biergarten.

Wednesday, May 18

8:30 a.m.-5 p.m. Cap and Gown Pick-up. Lambert Lounge, Mallinckrodt Center.

7:30 p.m. University College Presentation Ceremony at Simon Hall Aud.

8 p.m. The School of Technology and Information Management Recognition Ceremony at Edison Theatre.

9 p.m. Blues Night at Cicero's in Delmar Loop.

Thursday, May 19

8:30 a.m.-5 p.m. Cap and Gown Pick-up. Lambert Lounge, Mallinckrodt Center.

10 a.m. Phi Beta Kappa Reception at Steinberg Hall Gallery.

11 a.m. Phi Beta Kappa Initiation Ceremony. Steinberg Aud.

2:30 p.m. Eliot Honors Convocation for honor students, their parents and guests. Field House.

5 p.m. School of Engineering Recognition Ceremony. Field House.

8 p.m. School of Arts and Sciences Recognition Ceremony and Reception. Field House.

Friday, May 20

8:30 a.m. Commencement in Brookings Quadrangle. Rain location: 10 a.m. at The Arena, 5700 Oakland Ave.

Honorary degrees —

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Williams College, and a master's degree and doctorate from Harvard.

Carroll Behrhorst, founder of the The Behrhorst Development Foundation in Guatemala, will receive a doctor of humanities degree. The foundation that bears his name began as a one-room, one-man clinic; it has since achieved worldwide renown as a model for rural health care.

Behrhorst received his bachelor's degree at Washington University in 1943 and graduated from the University's medical school in 1947. From 1951-1958, he operated a family practice in Winfield, Kansas. After several trips to Guatemala, Behrhorst closed his practice and moved his family to Chimaltenango, a town of 200,000 in Guatemala's poverty-stricken highlands. Behrhorst's clinic has treated some 250,000 patients since 1962, and has provided extensive training that allows Indians to run health, agriculture, family planning and water projects without outside assistance.

Behrhorst is an adjunct assistant professor at Tulane University's School of Public Health and Tropical Medicine in New Orleans.

Educator Marva N. Collins, who has been dubbed "Marvelous Marva" and the "Miracle Worker," will receive a doctor of laws degree. After teaching in Chicago's public school system for 14 years, Collins resigned in 1975, frustrated with a bureaucracy that was failing to teach children. With \$5,000 from a pension fund, she converted the top floor of her home in Chicago's inner city to a one-room schoolhouse, which she named Westside Preparatory School. Collins began her school with 18 pupils who had been labeled unteachable. The students soon were scoring above the national average on standardized reading and math tests.

Collins was the subject of a made-for-TV movie starring Cicely Tyson, and has been featured on CBS's "60 Minutes," the "Phil Donahue Show" and many other television programs. She has written a book, *Marva Collins' Way*.

Robert J. Glaser, director for medical science at Lucille P. Markey Charitable Trust in Menlo Park, Calif., will receive a doctor of science degree. Glaser has published more than 100 papers on medical education, health care, rheumatic fever and streptococcal infections. Glaser, who served eight years on the Washington University Board of Trustees, recently has been re-elected for an additional term. He has held several positions at Washington's medical school, including associate

dean, chief of the rheumatic fever clinic and chief of the immunology division.

After graduating magna cum laude from Harvard Medical School, Glaser trained in internal medicine at Washington and Harvard universities. Former dean of the University of Colorado and Stanford medical schools, Glaser was a member of the Sloan Commission on Government and Higher Education.

Jack L. Strominger, one of the nation's top biochemists, will be awarded a doctor of science degree. Strominger's early studies of complex nucleotides led to a 25-year investigation of the action mechanism of penicillin and the structure and biosynthesis of cell walls. Twelve years ago, he turned his attention to the study of transplantation antigens, which are responsible for the rejection of transplanted organs.

Strominger received his bachelor's degree from Harvard and his medical degree from Yale. He joined Washington University's faculty in 1955 as the Markle Scholar in Medical Science. In 1964, he became a professor in pharmacology and chemical microbiology at the University of Wisconsin in Madison, where he also served as chairman of the Department of Pharmacology. In 1968, he was named a professor of biochemistry at Harvard, where he is the Higgins Professor of Biochemistry.

August Wilson, a Pulitzer Prize- and Tony Award-winning playwright, will receive a doctor of letters degree. Wilson currently has two plays running on Broadway, which Newsweek magazine calls an unprecedented feat for a black playwright. "Fences," which opened on Broadway in 1987, was the first play in 30 years to capture all of the major theatrical awards — including the 1987 Pulitzer Prize for Drama, Tony Awards for Best Play and Best Director, and awards from the New York Drama Critics Circle, Drama Desk, Outer Critics Circle and American Theatre Critics Association for Best Play.

"Fences" and "Joe Turner's Come and Gone," also on Broadway, are part of a cycle of plays about the experience of black Americans through each decade of the 20th century. Another of Wilson's plays, "Ma Rainey's Black Bottom," won the New York Drama Critics Circle Award in 1984. That production was directed by Lloyd Richards, artistic director of the Yale Repertory Theatre and dean of the Yale Drama School, with whom Wilson has had a long association. "The Piano Lesson," which completed its run at the Yale Repertory late last year, is Wilson's fourth collaboration with Richards.



Bernard Bailyn



Carroll Behrhorst



Marva N. Collins



Thomas F. Eagleton



Robert J. Glaser



Jack L. Strominger



August Wilson