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WU scientists develop coating to protect
plastics in space-bound experiments

The concept was fairly simple.
Lofted high into orbit by the space
shuttle, specially developed plastic films
would capture evidence of cosmic dust
particles — bits of ancient, drifting mat-
ter that may hold clues to the formation
of the solar system.

Or so WU scientists thought. Last
fall, plans for this space-age dragnet
operation of sorts nearly came to a halt.
Something in space was destroying the
plastic. 

"You've got a big problem," the
National Aeronautics and Space Admin-
istration (NASA) told scientists here,
who had been collaborating with two
groups in Germany to devise a cosmic
dust experiment for a 1984 space shuttle
flight. Launched into earth orbit by the
shuttle, a cylindrical satellite called the
Long Duration Exposure Facility would
carry the experiment and a number of
experiments, including the WU experiment.

"Of course, so-called empty space is
not empty," said Robert M. Walker,
WU McDonnell Professor of Physics and
director of the McDonnell Center for the
Space Sciences, "but this is a phenom-
emon we never dreamed of."

Concerned with the impact on a
number of experiments, including
WU's, NASA officials decided to test a
variety of materials for erosion during
the Fifth Shuttle.

Different types of plastic strips
coated with thin metal films were hur-
rriedly prepared at WU under the direc-
tion of Ernst Zinner, a senior research
associate and principal investigator on
the cosmic dust experiment. Following
the shuttle's return to earth last Novem-
ber, an analysis of the samples con-
ducted at the University showed that a
20-atom-thick coating of a gold-palla-
dium alloy was sufficient to protect the
plastic from the erosion.

Participating in the analysis were
Zinner; Walker; Randy Korotev, an
assistant professor of political science in
the Department of Political Science, has
been awarded a fellowship from the John Simon
Guggenheim Memorial Foundation. 

Kenneth A. Shepsle, WU professor
of political science, has been awarded a
fellowship from the John Simon
Guggenheim Memorial Foundation. 

Grants totalling over $3 million were
made to 292 scholars, scientists and art-
ists this month, in the foundation's
59th annual competition.

The fellowships are awarded on the
basis of demonstrated accomplishment in
the past and strong promise for the
future. There were over 3,500 applica-
tions for the grants.

Shepsle's proposed research topic
was "Institutional Equilibrium." Shepsle
described the work as a theoretical and
mathematical approach that examines
the division of labor and the extent of
decentralization in organizations — cor-
porations, government bodies and edu-
cational institutions. Shepsle will concen-
trate on legislative bodies and how their
structure and procedures combine with
self-interest to channel the consideration
of alternative policy.

Shepsle is the author of a book, The
Giant Jigsaw Puzzle: Democratic Com-
mittee Assignments in the Modern
House, and coauthor of another, Politics
in Plural Societies: A Theory of Demo-
cratic Instability. He has also edited and
coauthored two other volumes, one on
the Congressional budget process and an-
other titled Political Equilibrium.

He joined the WU faculty as an
assistant professor of political science in
1970. In 1978, he became professor of
political science and research associate at
the Center for the Study of American
Business. He has received grants from
the National Science Foundation, the
Olin Foundation and was a national
fellow, Hoover Institution, in 1974-75.

Shepsle received undergraduate
degrees in mathematics and political sci-
cence from the University of North Caro-
lina, Chapel Hill, in 1966, and a PhD in
political science from the University of
Rochester in 1978.

WU scientists develop coating to protect
plastics in space-bound experiments

Robert M. Walker

"Being ... in mind the historical significance
of the day, members of the WU community gathered
April 15 to celebrate the renovation and expansion
of the University's athletic facilities. While the WU
Marching Band played and the cheerleaders
cheered, members of the WU Band of Trouser-
like William R. Tao, left, distributed free T-shirts
bearing the slogan: "I'm Getting An Athletic Com-
plex at Washington University." Baseballs, foot-
balls and soccer balls were thrown into the crowd
as the end of the ceremonies. Chancellor Danforth,
above, with his old friend the WU mascot bear, was
master of ceremonies.

Kenneth A. Shepsle
Center proposes five easy ways to take the sting from acid rain

Acid rain conjures up some well-known images for many people in New England and Canada. Like dead fish. Dying lakes. Crumbling tombstones, statues and buildings.

Pretty emotional stuff, acknowledges the head of the world’s largest academic center for air pollution and meteorological data—the CAPITA Center for Air Pollution Impact and Trend Analysis (CAPITA).

But high emotions and hastily drawn remedies are not the best approach to controlling this phenomenon that occurs when sulfur and nitrogen gases from power plants, oil refineries, automobile exhaust and other sources are transformed with water vapor in the atmosphere.

So says Rudolf B. Husar, director of CAPITA and professor of mechanical engineering.

According to Husar, not enough is known about acid rain to justify drastic and costly new regulations. A good example of premature action, he says, is a bill passed by the U.S. Senate and now under consideration by the House. The bill would force a uniform curtailment of sulfur dioxide emissions across a 30-state area in the eastern half of the country.

Yet a study just completed by CAPITA shows that acid rain-causing pollutants do the greatest damage within a 300- to 600-mile radius of their sources. This finding means that reducing pollution in most parts of the Midwest and Southeast (namely, Missouri, Tennessee, Alabama, North and South Carolina and parts of Kentucky) would do little to help the Northeast, where shallow, rocky soils make it particularly sensitive to the toxic effects of acid rain.

“In the past,” Husar says, “we have substantially overestimated the long-range transport of these pollutants. And because our knowledge of acid rain is still inadequate, misjudgments will continue to arise. But,” he emphasizes, “doing nothing is not the right attitude, either.”

What Husar proposes instead of one major piece of legislation are five easy pieces—a quitter of relatively painless actions that can be taken while research continues.

• Washing coal. Much of the coal that power plants burn is already partially washed to remove stones and dirt. In that process, sulfur is also removed. The more thoroughly coal is washed, the less sulfur it contains and the cleaner it burns.

• Engineering improvements into power plants. Between 5 and 10 percent of the energy a power plant produces literally goes up in smoke, heating most smokestack plumes to about 300 degrees Fahrenheit. If even a small percentage of this heat loss could be recycled back into the system, plants could save thousands of dollars a day in fuel. Also, emissions released in cooler air would stay closer to ground level, reducing the time pollutants have to recombine into more toxic substances. “It’s the hot, buoyant air, not the height of the smokestacks, that literally goes up in smoke, heating most smokestack plumes to about 300 degrees Fahrenheit,” Husar explains.

• Switching fuels. The impact of acid rain could be softened if extra-clean coal were burned during the spring, when sensitive northeastern lakes are hit with a massive dose of acid precipitation in the form of melting ice and snow. Charcoal, dirtier coal could be burned during periods that are less traumatic for plants and wildlife.

• Further emission controls on automobiles. Exhaust from gasoline-powered vehicles contains nitrogen oxides—the other major component of acid rain besides sulfur compounds. The reduction of both acidifying agents is important.

• Promoting energy conservation. In the end, Husar notes, it’s not the power companies causing acid rain. It’s consumers of electricity.

Meanwhile, Husar says, we should study not only man-made pollutants, but the natural occurrence of sulfur and nitrogen compounds. “That’s the only way to tell how much we are straining nature,” he states. “In the past, this aspect of the environment—understanding the normal—has been pushed under the rug.”
Announcements

Honor's Assembly

East St. Louis Mayor Carl E. Officer will be the keynote speaker at WU's first All-University Honor's Assembly at 11 a.m. Wednesday, May 4, in Graham Chapel. A reception will follow the assembly in the Ann Whitney Olin Women's Building Lounge.

Officer will speak on "The Youth Shaping the Future of this Country."

The assembly, which is free and open to the public, is sponsored by the Alpha Kappa Circle of Omicron Delta Kappa, the national leadership honorary.

The honor's assembly seeks to recognize undergraduate students who have displayed extraordinary leadership potential through participation in student government, sports, performing arts, service groups, honoraries and other student organizations," said Andrew Kaplan, president of Omicron Delta Kappa.

Kaplan said the group plans to hold the honor's assembly annually.

Living tribute

When the founder and early employees of CPI Corp. were honored recently for their long years of service, no gold watches or pendants passed hands. Instead, a living tribute was begun — an endowed scholarship fund for the WU School of Business and Public Administration that will be added to as additional employees retire or mark their 30th anniversaries.

The CPI Founders Scholarship Fund was created with an initial endowment that will be supplemented by future donations in recognition of individual employees. Awards from the fund will be made to business students annually, beginning this fall.

According to CPI chairman Alyn Essman, "After 30 years of service, we wanted to do something more lasting for our employees than offering them token gifts. We have a corporate tradition of developing people, and the scholarship fund is an extension of that tradition.

CPI is a St. Louis-based corporation that specializes in retail consumer services, including portrait studios, residential carpet cleaning, one-hour photo finishing labs and private telephone systems.

New facilities

The Mallinckrodt Institute of Radiology's Division of Radiation Oncology at the School of Medicine commemorated its recently expanded facilities April 21-23 with an inaugural scientific program.

The program marked the installation of a new Clinac 6 linear accelerator and completion of the new Hyperthermia Treatment and Research Center at Mallinckrodt Institute. With the addition of the Clinac 6, Mallinckrodt Institute now has four linear accelerators, which provide a high energy beam used to destroy cancer cells. The Hyperthermia Center will research the use of heat to shrink cancer cells.

Boccia exhibition dedicated to May

Edward E. Boccia, professor of art at WU's School of Fine Arts, has dedicated "The Boccia Retrospective Exhibit" at the Mitchell Museum in Mt. Vernon, Ill., to the memory of the late Morton D. May, who died April 13.

The 42-year retrospective includes 56 oil paintings and 24 drawings, the majority lent from private collections and institutions. Several of the works on view are from the collection of philanthropist and civic leader "Buster" May.

"For over 30 years, Buster's encouragement has allowed me to paint freely, from the heart, never to compromise," stated Boccia. "He was a great man who loved art above all else."

Included in the exhibition are 36 self-portraits painted in 1945, 1956 and 1982. Penisieroso, a five-panel polyptych standing approximately seven feet high and never before exhibited, is also on display.

Boccia joined the WU faculty in 1951. He studied at Pratt Institute, New York, the Arts Students League in New York and earned a BA and MA from Columbia University.

Boccia's work is included in over 200 private collections in New York, Michigan, South America, Belgium and Canada. He has exhibited at the L'Oobelisco Gallery in Rome, Italy, and the Dada Gallery in Athens, Greece.

The exhibition will hang through May 29 at the museum located on Rich-view Road. Viewing hours are 1 p.m. to 5 p.m. Tuesday through Sunday.

Lady Bears break WU records at track meet

Kathy Johnstone qualified for the NCAA Division III women's track nationals when she won the 5,000-meter run in the Southern Illinois University Edwardsville Relays April 16.

Her time of 18:05.9 beat the qualifying standard of 18:20.0. The nationals are slated for North Central College in Naperville, Ill., in late May. Her time also broke the University record, as well as the freshman record.

Lisa Cominetti also broke the University and freshman records when she won the 10,000-meter run in 34:53.1.

Two relay teams were first in the six-team event in which the Lady Bears finished third with 96 points. The host team was first with 171, followed by Millikin, 110, in second place. Fourth was DePaul; fifth was Principia; and sixth was Greenville, 25.

The winning relay teams were the Distance Medley and the 3,200-meter. The Distance Medley team of Cheryl Kornetzke, Kim Hubbard, Karen Palermo and Jane Hall was clocked at 13:35.5 for a University record. The 3,200-meter quartet was composed of the same four women.

Ann Streicher took second in the shot put and Lori Davis was runner-up in the 200-meter dash. The team of Tracy Berry, Karen Kimbo, Jeanette Cright and Linda Thomas was second in the 800-meter relay.

Wesley Harris was the only male to win an event as the Bears finished fourth with 78 points. Harris took the 400-meter dash in 49.7. Chuck Rohrer was second in the pole vault and Barry Sutore was runner-up in the long jump for a WU freshman record of 22 feet.

The Bear women continued their winning ways through April 19 when they beat the University of Missouri-St. Louis, 8-2. UMSL is a Division II school, which helped make the victory a little sweeter.

The smooth-throwing southpaw has fanned 75 batters over the same span and walked only 28. He also has four shutouts.

Rick Larsen, in his second year as head baseball coach, has spotted his star hurler against the best opposing teams, and, other than the hard-to-take opening loss, Gluckman has not let him down.

The Bears advanced to the Midwest Regional tournament last year and Larsen hopes to use Gluckman's strong pitching to go further this year.

Gluckman leads baseball Bears to victory

In the relatively short span of one month, the WU baseball Bears have become one of the top college baseball teams in the St. Louis area. They jumped from a 1-9 southern road trip to a 14-10-2 figure, or 13 victories, one loss and two ties in the last 30 days.

Instrumental in that streak has been junior pitcher Marc S. Gluckman, who has won seven games in a row, including six victories among the 13 played in the St. Louis area.

Gluckman's only loss was in the first game of the season, 1-0, at the University of Central Arkansas. The run scored in the first inning on a walk and a double.

The streak was snapped by Maryville, but Gluckman still won and has continued his winning ways through April 19 when he beat the University of Missouri-St. Louis, 8-2. UMSL is a Division II school, which helped make the victory a little sweeter.

A 6'4", 215-pounder, Gluckman has an earned run average of 0.77 for 58 innings. He's given up five earned runs and a total of 25 hits, with the only extra base knock being five doubles.

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Marc S. Gluckman

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Thursday, April 28
3:30 p.m. Black Honors and Awards Program with speaker Julian C. Mosley, WU instructor in Black Studies; Robert C. Watson, WU instructor in Black Studies; and members can perform for $5; all others $5 to admission. Edison Theatre. "Core Exhibition," work by freshman and sophomore students of the WU School of Fine Arts. (Opening: 5-7 p.m. Sun., May 1) Through May 8. Upper Level. Open regular library hours, 8 a.m.-5 p.m. weekdays; 1-5 p.m. weekends.

Exhibitions

"Core Exhibition," work by freshman and sophomore students of the WU School of Fine Arts. (Opening: 5-7 p.m., Sun., May 1) Through May 8. Upper Level. Open regular library hours, 8 a.m.-5 p.m. weekdays; 1-5 p.m. weekends.

"Modern Drawings and Watercolors." Through May 29. Print Gallery, WU Gallery of Art. An introduction to the WU School of Fine Arts. (Opening: 5-7 p.m., Sat., May 1) Through May 8. Upper Level. Open regular library hours, 8 a.m.-5 p.m. weekdays; 1-5 p.m. weekends.

Calendar Deadline
The deadline to submit items for the May 1-21 calendar of the WU Record is April 28. Items must be received by 5 p.m. the day before the event for consideration. May 15, 5-7 p.m. Through May 8. Upper Level. Open regular library hours, 8 a.m.-5 p.m. weekdays; 1-5 p.m. weekends.

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ESL courses offered
A four-week course for WU’s international graduate students who will be teaching assistants will be offered by the International Office and the Summer School beginning July 18.

"Communication Skills for International Graduate Teaching Assistants" will be an in-depth study of the fundamentals of lecture preparation and speech strategies involved in classroom teaching. Participants must be recommended by their academic department and obtain permission from Patricia Eldalad, coordinator of the English as a Second Language Program.

The course will meet from 8:30 to 10:30 a.m., Monday-Friday, from July 18 to August 11, the daily fee is $200.

The International Office is also offering two “Intensive English" sessions, June 20-July 13 and July 18-August 12. Intensive English courses are designed for intermediate-level students. Both sessions will meet Monday-Friday. Tuition is $575 for each course.

For more information on English as a Second Language courses, call Patricia Eldalad, International Office, Stix International House, 6470 Forsyth Blvd., at 880-5966.

AISL fellowships
The American Institute of Indian Studies (AISL) has announced a variety of fellowships for research in India available for the 1984-1985 academic year.

Applicants should be engaged in research or teaching at the college level and should hold a doctorate or equivalent degree. All applications must be submitted to AISL, 1130 E. 59th St., Chicago, Ill., 60657, by July 1, 1983. The awards will be announced in the spring of 1984.

The awards, which may be held for three to 10 months, are open to junior faculty; post-doctoral study awards; library, museum, and professional development fellowships; junior fellowships and travel grants.

For more information, contact Ruth Joby, Office of International Studies, Ext. 5958.