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Record

Dec. 15, 2000

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Washington University in St. Louis

DAVID KILPER

Light of hope Jill Carnaghi, assistant vice chancellor for student activities, lights a candle before her address on peace and light at the second annual Gathering for World Peace in Graham Chapel Dec. 13. Numerous campus groups participated in the event. Though attendance was sparse due to the heavy snowfall, organizers felt the event was a success.

Two students named Rhodes Scholars

By Gerry Everding, Tony Fitzpatrick & Neil Schoenherr

Sarah S. Johnson and Ian R. Klaus, seniors in the School of Arts & Sciences, were named recepients of Rhodes Scholarships on Saturday. This brings the number of University students who have won the highly acclaimed award to 21 since 1902.

Washington University joins Yale University and the United States Military Academy at West Point as the only institutions to have multiple Rhodes Scholars this year. Johnson and Klaus were the only recipients from St. Louis-area schools.

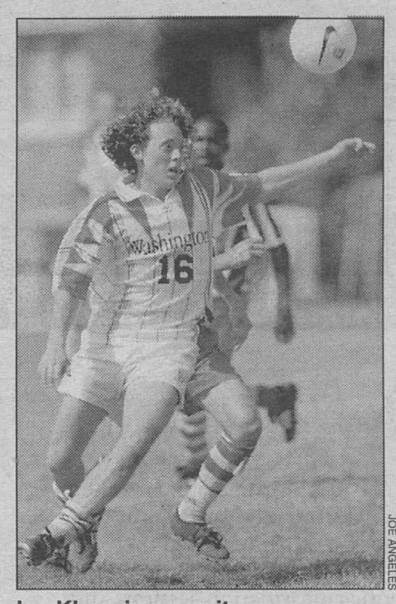
The two were among the 32 students in the United States chosen to receive the honor. Winners were selected from 950 applicants based on high academic achievement, personal integrity, leadership potential and physical vigor.

"We are very proud to have such talented students at Washington University," Chancellor Mark S. Wrighton said. "On behalf of the entire community, I extend congratulations to Sarah and Ian upon being selected for the prestigious Rhodes Scholarship."

As Rhodes Scholars, Klaus and Johnson will join the other winners in studying at Oxford University in England for two years with all costs paid.

Klaus, from Belvedere, Calif., is a double major in history and literature in history in Arts & Sciences. He has received numerous awards for excellence in history and as a scholar-athlete. A co-captain of the varsity soccer team and student representative to the University Board of Trustees, Klaus also founded a service organization on campus called "Bears and Cubs" that encourages athletes involved with tutoring young people in the community.

"I am incredibly excited," Klaus said. "I've been working hard for four years and I've had great support from my professors, friends and family. I hope this honor is just as exciting for them as it is for me."



JOE ANGELES

Ian Klaus is a varsity soccer co-captain and award-winning writer.

Klaus said he plans to switch gears slightly at Oxford and study philosophy and politics. He would like to teach after he leaves Oxford.

"Ian is in the top one or two percent of students I have taught in more than 30 years," said Gerald N. Izenberg, Ph.D., professor of history in Arts & Sciences and Klaus' academic adviser. "His work clearly demonstrates both superior analytic intelligence and great writing talent, matching his deep interest in both discursive thought and creative literature."

Klaus is working on his senior honors thesis on American reminiscenses of the Vietnam War. This summer he received a Bemis Fellowship to study the letters and manuscripts of British World War I soldier poets at the Imperial War Museum in England.

Klaus has won two prizes from the Department of African and Afro-American Studies for his essays on apartheid relations and on cultural nationalism and homophobia in African-American literacy and culture in the 1960s.

Besides being co-captain of the soccer team, Klaus was named a

See **Rhodes,** page 6

Mellon minority program awards funding renewal

By Neil Schoenherr

The Mellon Minority Undergraduate Fellowship Program recently awarded Washington University with a $300,000 funding renewal.

The program, initiated here in 1992, has enabled minority students to pursue independent study projects, engage in summer research at the University and in foreign countries, and upon graduation, enter advanced graduate programs.

The $300,000 renewal will be spread out over the next four years, said Susan Rollins, assistant dean and academic coordinator in the School of Arts & Sciences.

Gerald L. Early, Ph.D., Merle Kling Professor of Modern Letters and professor of English and African in Afro-American Studies, both in Arts & Sciences, was instrumental in starting the program at the University and now serves as its faculty director.

"I am proud to be associated with the Mellon program," Early said. "The aim of the program is worthy and important. The students are wonderful to work with. We hope to continue to use the money to support the Mellon's research expenses and to further their relationships with their faculty mentors."

The renewal money will be used for a variety of programs. Part of it will go toward continuing the Mellon Undergraduate Seminar, a one-credit class that teaches minority students learning techniques and tools of scholarly research.

Some of the funds will go toward continuing education for minority students. All minority students who enroll in a doctoral program at any university are eligible to have up to $10,000 of their loans repaid as part of the Mellon program.

Also included in this renewal is funding for each of the eight program mentors to receive a $250 stipend as a measure of the University's support of their hard work, Rollins said.

The University was urged to apply for the Mellon program in 1992 and received $200,000 to initiate the program. The fellowship was renewed in 1996 at $350,000.

Deep-sea vents studied by scientist on the ocean floor

By Trent Stockton

The feeling that you're sinking in deep, dark, cold water hundreds of miles from dry land is not a pleasant one. Neither is the feeling of being confined, cold and wet, for over eight hours in a metal sphere the size of a bathtub. Yet this is the only playing field for scientists exploring deep-sea ecosystems.

William H. Smith, Ph.D., professor of earth and planetary sciences in the School of Arts & Sciences, recently was one of 25 scientists from many universities and research institutes on an expedition to explore several aspects of the sea floor associated with the Juan de Fuca Ridge, about 240 miles off the coast of Oregon. Smith was aboard one of the descents made in the submersible Alvin, a famous craft in which scientists 23 years ago discovered a unique ecosystem that broadened "origins of life" theories. Smith rode the cramped container to test his sophisticated imager for clues on whether and how microorganisms at the ocean floor might be using available light for photosynthesis. The depth in which Smith did the majority of his work was 7,220 feet.

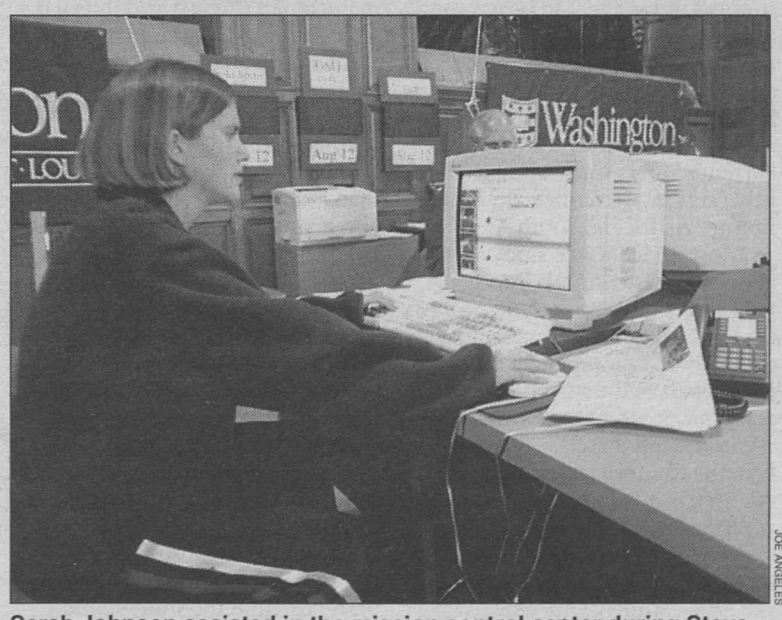
The ecosystem scientists found while aboard Alvin in 1977 comprises myriad life forms that exist at deep-sea vents. Deep-sea vents are hydrothermal geysers found in areas of tectonic activity, where the movement of continental plates along mid-ocean ridges creates zones of fissures in the Earth's crust as it is pulled apart. Cold seawater percolates down through the fissures, is heated as it nears the molten lava of the magma layer, and then expands and rises rapidly. The mineral-rich water is then either expelled in plumes from geysers that can be as hot as 375 degrees Celsius, or is gently released from lower-temperature springs.

The deep-sea vents support "vibrant oases of life," Smith said.

"At this depth there is not much life; a few fish, some sponges," Smith said. "Then, as you approach the vent, life blooms. Fauna is everywhere, all kinds, including fish, crabs, slugs, snails, octopuses, sea spiders and many others. Many organisms, like tube worms and several species of bacteria, are unique to the vents and were seen for the first time in 1977."

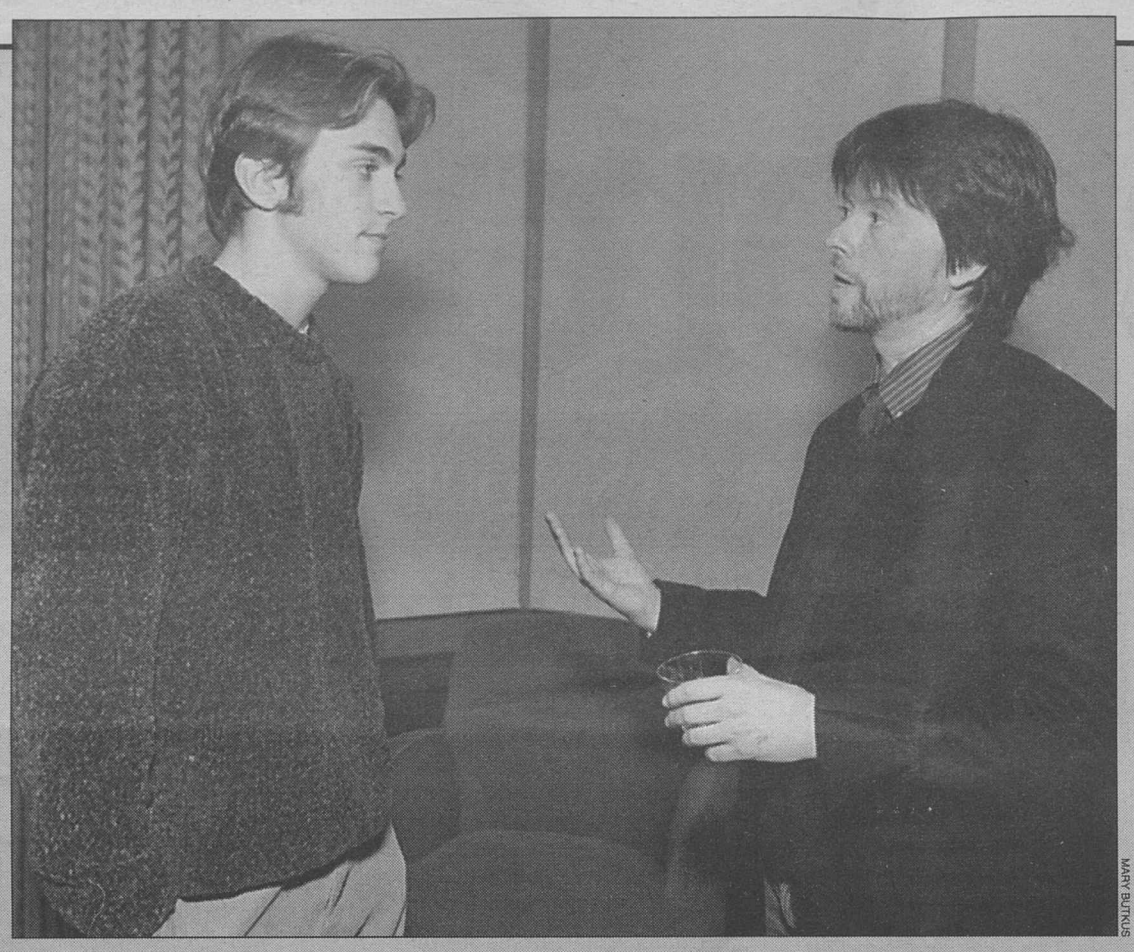
On the recent expedition, Smith used a microscopy hyperspectral image that he invented to observe the living bacteria surrounding the vents and their interactions with other organisms. Smith's sensor records digital images like a camera but resolves image data into more

See **Deep-sea vents,** page 6



JOE ANGELES

Sarah Johnson assisted in the mission control center during Steve Fossett's 1999 attempt to circumnavigate Earth by balloon.



MARY BUTKUS

Tips from a pro Award-winning filmmaker Ken Burns (right) discusses his latest work, "JAZZ," Dec. 7 in Graham Chapel with Jeffery Lancaster, a freshman in Arts & Sciences from Louisville, Ky.

Business students seek opportunities in the Silicon Valley

BY NANCY BELT

Fifty-five Olin School students will begin the new year in California's Silicon Valley, exploring job prospects at high-tech companies based there.

From Jan. 2-5, companies will offer information sessions and interviews. In addition, students can attend a major mobile-commerce symposium and networking reception open to the public and sponsored by the Olin School's Digital Commerce Center.

"We make it easy for the customer by bringing groups of students to the companies," said Amy Johnson, associate director, business development for the Olin School's Weston Career Resources Center. "Our road shows, whether they're in Silicon Valley, on Wall Street, in Chicago, Boston, Austin or Denver, help MBAs and BSBAs find full-time jobs and summer internships with leading companies."

During the Silicon Valley road show, companies such as Cisco Systems, Guidant Corp., InfoSys, SOFTBANK Venture Capital and others, will make presentations to the student group, comprised of 45 MBAs and 10 BSBAs. They want to learn what working in marketing, business development, finance or other areas of a high-tech company would be like. Based on past road shows, more than 60 percent will have interviews while in Silicon Valley, many others will have made connections helpful to their career search, and approximately 40 percent will eventually receive job offers as a result of the trip.

For the trip, co-sponsored by three Olin School student groups

See **Students**, page 7

Study-abroad student numbers increasing

BY NEIL SCHOENHERR

Closely mirroring a national trend, growing numbers of Washington University students are choosing to study abroad.

The number of United States college students receiving credit for study abroad programs in 1998-99 jumped nearly 14 percent from the previous school year, reaching a record total of 129,770 students, according to Open Doors 2000, a recently released annual report published by the Institute of International Education.

"We are definitely seeing an increase in the number of students interested in studying abroad," said Priscilla Stone, Ph.D., director of international studies. "More and more students are going to English-speaking countries like England and Australia."

Robert Booker, director of overseas programs, said he has seen a huge increase. "Part of that increase is due to a large junior class and part of it is due to the growing national trend," Booker said.

The School of Arts & Sciences currently offers study-abroad programs in 17 countries in Asia, Europe, Africa and South America.

Most students who study abroad go for a semester or two during their junior year. By that time, most students have chosen a major and the study abroad experience is a critical part of the student's overall academic program.

Stone said there are many benefits to studying in another country.

"It is an incredibly enriching experience personally, culturally, intellectually and academically," she said. "Students are able to take classes that Washington University may not offer and gain experiences they made not have had on this campus. The experience of studying abroad is invaluable as we try to create a truly global campus here."

Many students find that studying in another country opens their eyes to future internship and job possibilities with an international focus. it can be a first step toward an international career and can be a way to become more fluent in a foreign language.

> "Students are able to take classes that Washington University may not offer and gain experiences they made not have had on this campus."
>
> PRISCILLA STONE

Theresa White, a senior majoring in English and international studies and minoring in Spanish, said that studying abroad changed her life. She studied in Santiago, Chile for a semester and a summer during her junior year.

"Studying abroad is a lot more than academics," White said. "It's also about meeting new people and trying new things. I think people are starting to realize the value of studying abroad as part of a personal growth experience. And, with the global community expanding as it is, studying abroad is not only a great opportunity, it's also highly desirable for a well-rounded education."

Other University students seem to be catching on to the advantages of the program. During the 1999-2000 academic year, 229 students participated in the study-abroad program. This year, the number has jumped to 317.

The number of non-Arts & Sciences students studying abroad leapt from 14 in 1999-2000 to 38 in 2000-01. Booker said the largest increases were in students going to Australia and to University College in London.

Although they do provide a way to immerse oneself in another culture, study abroad programs are not all fun and games.

"Washington University is certainly in the forefront in regards to bringing under scrutiny the academic reputations of our partner institutions," Booker said.

Participants in programs that are sponsored or approved by University College in London receive a program transcript and Washington University credit for all satisfactory courses. University credit is awarded based upon a review of academic performance and coursework. Those credits may be used to satisfy degree requirements and, with departmental approval, major requirements.

If a student's academic goals cannot be met by one of the University's programs, that student can petition to participate in an alternative program overseas. A compelling case must be presented, and the petition must be strongly endorsed by the department.

"Studying abroad can be an integral part of any degree program," Booker said. "Obviously, academics come first but the cultural experiences are second to none. Studying abroad allows students to see the United States from a completely different perspective and experience another set of values and norms."

Biological "islands" study illustrates diversification, speciation

BY TRENT STOCKTON

Lizard species on large Caribbean islands are more numerous than those on smaller islands because there is more evolution going on.

The bigger the island, the faster species proliferate and diversify.

Jonathan B. Losos, Ph.D., associate professor of biology in the School of Arts & Sciences, proved this species-area relationship in a study of 143 Caribbean Anolis lizards species on 147 islands. Focusing on the four largest islands — Cuba, Hispaniola, Jamaica and Puerto Rico, collectively known as the Greater Antilles — Losos showed that the diversity of lizard species is primarily a result of the evolutionary process of speciation, rather than the ecological processes of colonization and extinction.

> "There is simply more opportunity for isolation to occur and for species to diverge on larger islands."
>
> JONATHAN B. LOSOS

Losos and co-author Dolph Schluter, Ph.D., professor of biology at the University of British Columbia, published these results in the Dec. 14 issue of Nature. The study is an important and novel extension of a 33-year-old theory on the genesis of biological diversity.

"When you focus on the larger islands, the rate of speciation is a function of island area," Losos said. "A large island equals more speciation events. At some level this is intuitive, but it has never been demonstrated before that differences in the rate of speciation, of evolution, can produce the species-area relationship."

Losos and Schluter's results complement the well-known "Equilibrium Theory of Island Biogeography," proposed in 1967 by Robert MacArthur of Princeton University and E.O. Wilson of Harvard University. MacArthur and Wilson's ecological theory proposed that the number of species on any island reflects a balance between the rate at which new species colonize it and the rate at which populations of established species become extinct. An "island" in this sense is not strictly an island in a stream or ocean, but any ecosystem, a forest for example, surrounded by barriers. A major component of this theory is that the rate of extinction of most species on large islands is lower than on small islands, and if everything else is equal, then a relationship is observed between the area of an island and the number of species occurring on that island. But Losos and Schluter have shown that evolution can be just as important as colonization and extinction in producing the species-area relationship.

MacArthur and Wilson were unable to address the role that evolution plays in producing the species-area relationship because the appropriate data were unavailable until recently. In order to address such questions, Losos and Schluter used the Caribbean lizard phylogeny, or genetic evolutionary family tree, of Caribbean lizards to estimate the number of immigration and speciation events on the islands.

Todd Jackman, Ph.D., assistant professor of biology at Villanova University, reconstructed the phylogeny while he was a postdoctoral fellow working in the laboratory of Allan Larson, Ph.D., professor of biology in Arts & Sciences.

"The phylogeny is indispensable," Losos said. "Only with the understanding of evolutionary relationships of the species can we address these sorts of questions. The critical step was the work done in Allan Larson's laboratory here at the University identifying the evolutionary relationships among these lizards."

Given that a species-area relationship exists in the Caribbean, Losos and Schluter provide an explanation for why larger islands have more speciation events.

"There is simply more opportunity for isolation to occur and for species to diverge on larger islands," Losos said.

The classic explanation of how speciation occurs is that one species gets separated into two or more geographically isolated groups, between which there is no genetic contact; they are not interbreeding. Over time, the groups diverge so that even if the geographic barrier that caused the isolation were removed, they are now separate species and cannot interbreed.

An unexpected finding reported by Losos and Schluter is the existence of an island-area threshold of 3,000 square kilometers (roughly 1,800 square miles), below which speciation does not occur. It is only on the four largest Caribbean islands that there is evidence of speciation. This finding, Losos said, has never been convincingly demonstrated until now, and, as is often the case in science, raises more questions than it answers.

"We don't know why the threshold is there," Losos said. "The islands of Guadeloupe and Martinique are quite large and vegetationally diverse, there are plenty of habitats for lizards to exploit, and yet speciation has not occurred there.

"This new work fleshes out the ecological theories of MacArthur and Wilson and others," Losos added. "And it gives a fuller, richer understanding of what causes species diversity."

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Washington University in St. Louis

Medical School Update

Motivation to MOVE
New program encompasses many aspects of exercise

BY NICOLE VINES

Do you habitually make a New Year's resolution to begin an exercise program only to end up frustrated and sedentary before Valentine's Day? The Program in Physical Therapy wants to help Washington University employees build a balanced, safe exercise regimen with a new group program called MOVE.

MOVE is a 16-week exercise class for individuals age 40 and older seeking to improve health, fitness and function. The program is designed around the principles of flexibility, strength, endurance, balance and coordination.

"In order to improve overall fitness, it's important to encompass all five of these aspects," said Catherine A. Siener, instructor in physical therapy. "Exercise incorporating these components is known to prevent some of the detrimental effects of aging."

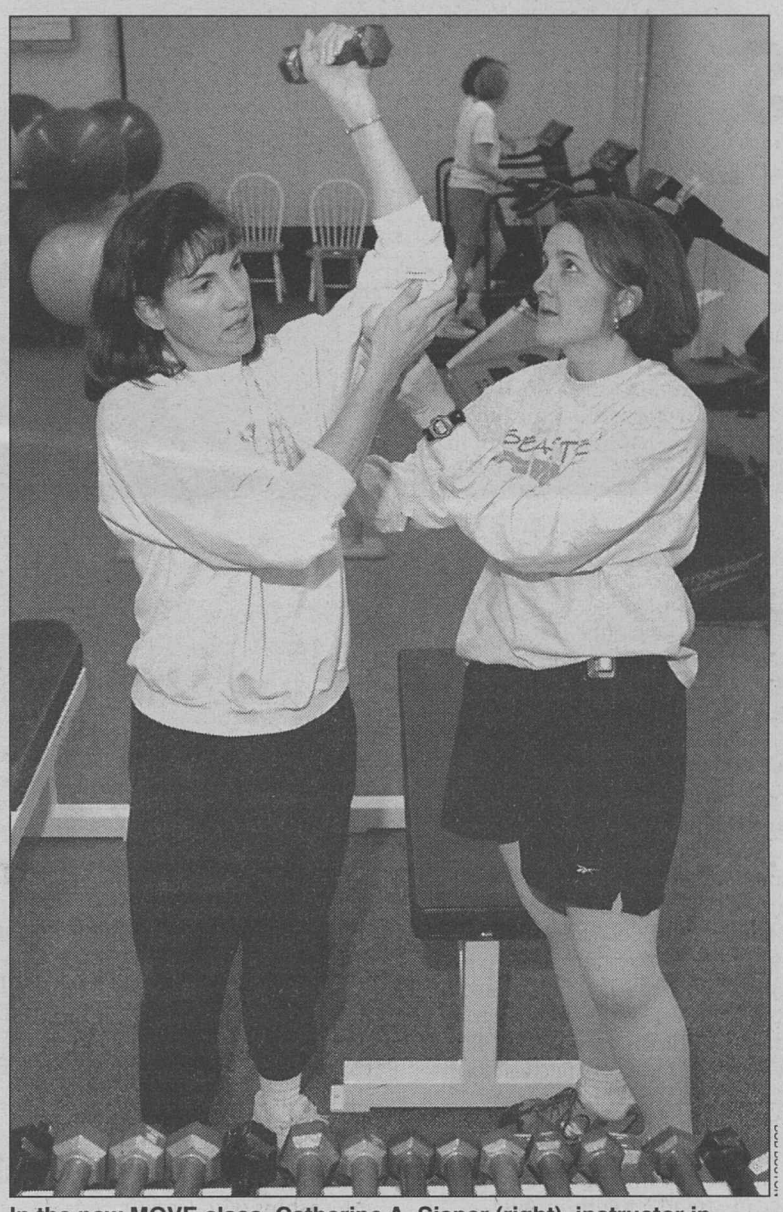
Following individual assessments, participants will do a variety of exercises ranging from low impact aerobics and exercise balls to resistive and stretching exercises. Instructors will help participants develop personalized home-exercise programs.

Siener points out that exercise benefits include reducing one's chance of injury, strengthening large muscle groups, increasing bone mass, reducing cholesterol and blood pressure and burning calories to manage weight.

A new MOVE session will begin the second week in January. Classes will be held from 4 to 5 p.m. Tuesdays at the Center for Health Promotion, 4444 Forest Park Blvd., and from 2 to 3 p.m. Thursdays at the Clayton Community Center, 50 Gay Ave. Faculty from the Program in Physical Therapy will lead each session. Fees are $80 for once a week or $150 for twice a week.

Individual consultations also are available, as well as an eight-week program called On The Move. The Program in Physical Therapy and Washington University's Weight Management Center offer On The Move for overweight individuals experiencing health or fitness problems.

For more information, call Debbie Long at 286-1940.



In the new MOVE class, Catherine A. Siener (right), instructor in physical therapy, works on free weights with Gail Moore, an employee in the Division of Comparative Medicine.

Type 1 diabetes genetic cause found by researchers

BY DIANE DUKE WILLIAMS

School of Medicine investigators have identified a novel gene that causes an inherited form of type 1 (insulin-dependent) diabetes and autoimmunity.

Mutations in a single gene called *JM2* cause the disease, the researchers found. The mutations adversely affect the function of the protein the gene encodes.

This finding might lead to ways to prevent type 1 diabetes.

The research team, led by Talal A. Chatila, M.D., associate professor of pediatrics, and Anne M. Bowcock, Ph.D., professor of genetics, studied blood samples from two families affected by a rare disorder that affects only boys and causes type 1 diabetes and allergies. They found mutations in a gene located in a region of the X chromosome previously linked to type 1 diabetes.

"This is an example of a single gene defect causing a high incidence of type 1 diabetes in affected children," said Chatila, lead author of the study. "It provides us with an important tool for dissecting the genetics of type 1 diabetes and deciphering how the disease comes about in the general population."

Results will be published today in the Journal of Clinical Investigation and posted on its Web site, http://www.jci.org/.

Many children with the disorder, called X-linked autoimmunity-allergic disregulation syndrome (XLAAD), show the classic signs of diabetes. They also suffer from chronic diarrhea and eczema. Because XLAAD causes severe wasting, it often kills babies during the first months of life.

Chatila: Associate professor of pediatrics

Bowcock: Professor of genetics

> "This is an example of a single gene defect causing a high incidence of type 1 diabetes in affected children."
>
> TALAL A. CHATILA

Identification of the gene, Chatila said, supports the idea that a limited number of genes are critical for the development of diabetes and other autoimmune disorders.

"Now we need to carefully investigate whether the pathway that involves this gene is mutated in other patients with type 1 diabetes and whether other genes collaborate with this gene in the disease," he said.

Between 500,000 to 1 million people in the United States have type 1 diabetes, which usually begins in children or young adults. It develops when immune system cells called T lymphocytes kill islet cells in the pancreas that produce insulin. Insulin "unlocks" the cells of the body, allowing glucose to enter and fuel them. When cells don't obtain enough fuel, they can't function.

The two families in the study had five affected males. All five suffered from type 1 diabetes, chronic diarrhea and severe allergic reactions. Other family members were not affected.

The researchers found mutations in *JM2* in all the affected males. This gene codes for a transcription factor—a protein that regulates the activity of other genes.

Chatila's working model is that defects in the JM2 protein make T lymphocytes—the immune cells that mediate type 1 diabetes and abet the allergy—hyperactive and likely to destroy islet cells.

"They're easy to activate and difficult to shut down," he said.

Understanding how JM2 regulates the immune response and how defects in this protein cause type 1 diabetes will provide important insights into the development of the disease and into ways of preventing its onset, Chatila added.

Communication pathways in cells investigated

Kendall J. Blumer, Ph.D., associate professor of cell biology and physiology, has received a four-year $1.3 million grant from the National Institute of General Medical Sciences. The award will fund work on proteins that relay signals into cells.

Cells must constantly respond to outside stimuli. Messages arriving at the cell surface are detected, amplified and transmitted accurately to molecules inside the cell that can respond to the commands.

With the new grant, Blumer's group will help determine how certain cell-surface receptors are activated and how they in turn activate the correct G proteins. These proteins transduce messages and pass them to appropriate signaling pathways, triggering characteristic responses of cells. Some G proteins are involved in vision, for example, whereas others contribute to our sense of taste or smell.

The researchers also are particularly interested in G proteins' roles in organizing the cellular skeleton, an arrangement of fibers that helps cells move and maintain their shape.

This work might lead to a better understanding of how immune system cells migrate to sites of inflammation to deal with invading pathogens. It also might help explain why cancer cells can move through tissues as they metastasize.

Malfunctioning G proteins cause the symptoms of cholera and some inherited hormonal disorders. They also are involved in alcoholism, diabetes and other conditions.

"We hope to discover new principles of G-protein signaling that will reveal new fundamental facts about how cells work and provide the foundation for understanding how the process goes wrong in many diseases," Blumer said.

Needy families' holidays brightened by medical school and BJC employees

School of Medicine and BJC Health System employees again are joining forces to brighten the holidays for needy families in the Forest Park Southeast neighborhood.

This is the gift drive's fifth year, and the volunteers are finding new ways to provide necessities — as well as a few treats.

Esther Shin of Urban Associates contacts the families and finds out their needs. She works in the neighborhood, which Washington University is helping to renovate. BJC social workers also get in touch with families. Clothes, kitchenware and bus passes are the most requested items.

"You just know people are asking for the bare minimum," said Darlene Huebner, who receives the lists and circulates them around the medical school. Central administration and the Faculty Practice Plan are helping about 20 families this year. The urology division and molecular microbiology department and others also are aiding families. At BJC, departments ranging from security to admissions to various nursing divisions are gathering gifts for 30 families.

"Then everybody in the department pulls together to get what the family needs, plus a few extras," said Sigrid Nelson, a social worker who circulates the lists at BJC. "Some people go hog wild. They get hold of a TV or VCR. Last year, one person even came up with a refrigerator." Another donor bought shoes for every member of a family. Most givers wrap presents before handing them in.

This year, central administration went beyond the lists, holding a food drive and publishing a cookbook to raise funds. Recipes came in from all over the medical school, plus illustration, copying and binding were donated. The book quickly sold out. Most of the proceeds will go to grocery store gift certificates for the families.

Not all the gifts are practical. There are toys for the children.

"Seeing their faces makes it all worthwhile," Nelson said. "They're overwhelmed just by the gift-wrapped boxes."

Huebner said the medical school departments enjoy receiving thank-you notes and pictures of kids with their presents.

"Everyone is very generous, and it seems to make each of us appreciate our own holiday celebrations more," she said.

Gerald Rubin to deliver fourth annual Kipnis lecture Jan. 18

The fourth annual David M. Kipnis Lecture will be held at 4 p.m., Jan. 18, in Cori Auditorium, 4566 Scott Avenue.

Gerald M. Rubin, Ph.D., director of the Drosophila Genome Center in Berkeley, Calif., and vice president for biomedical research at the Howard Hughes Medical Institute, will be the speaker.

Rubin will discuss "Trying to Understand the Drosophila Genome." He has pioneered the development of the fruit fly Drosophila as a powerful modern tool for examining development of the nervous system. He has been at the forefront of identifying and characterizing molecules that are important in assembling tissues into useful organs.

Many of the proteins Rubin has studied have proven important components in diseases such as cancer and neural degeneration. In addition, he has trained a new generation of researchers who continue this pioneering work.

Rubin has received numerous honors. He is a member of the National Academy of Sciences and a fellow of the Academy of Arts and Sciences.

In addition, he is a co-founder of Exilixis, a company pioneering the use of genetically manipulatable model systems for biomedical research.

The annual Kipnis lecture was established by the Department of Moleculary Biology and Pharmacology to honor David M. Kipnis, M.D., Distinguished Professor of Medicine and chair of the Department of Internal Medicine from 1972 to 1992.

Kipnis lecturers are researchers whose work on basic questions related to the control of cell growth, differentiation and communication has important implications for understanding the origins of human desease.

University Events

Shapiro & Smith light up Edison Theatre stage Jan. 19-21

By Liam Otten

Shapiro & Smith Dance has earned a reputation for creating works that are at once intelligent and accessible, running the gamut from searingly provocative to absurdly hilarious. With their breathtaking athleticism, psychological acuity and acid wit, the troupe offers a trademark combination of no-holds-barred physicality and astonishing emotional depth.

The husband-and-wife team of Danial Shapiro and Joanie Smith established Shapiro and Smith in 1987. The couple, who met while dancers with Murray Louis and Alwin Nikolais and began collaborating in 1985 while on a Fulbright Lectureship grant in Helsinki, Finland.

Today, the troupe features seven performers — Shapiro, Smith, John Beasant III, Susie Bracken, Mathew Janczewski, Lillian Stillwell and Megan McClellan — and a regular cast of a dozen composers, writers and designers.

The New York Times praises Shapiro & Smith as "exuberant and surprisingly poignant," and Dance Magazine calls them "the most splendid theatrical experience of the season … substance and craft, diversion mingled with flashes of poetic revelation." The Village Voice notes that the choreographers "operate from a strong dance motivation" and that "their dancers take flying risks angelically."

Shapiro & Smith Dance bring their breathtaking blend of exuberant physicality, biting sarcasm and psychological insight to Edison Theatre Jan. 19-21.

Shapiro & Smith Dance has performed at some of the world's most prestigious festivals and venues, including the Joyce Theater, Lincoln Center Out-of-Doors, Dance Theater Workshop, Danspace Project, the Milan Festival, P.S. 122 and Korean International Festival. Their work has been commissioned by such internationally renowned companies as the Phoenix Dance Company in Leeds, England; the PACT Dance Company in Pretoria, South Africa; the Alvin Ailey Repertory Ensemble and the Alvin Ailey American Dance Theater, which recently premiered their piece called "Fathers and Sons."

Their many honors and awards include fellowships from the National Endowment for the Arts and the New York Foundation for the Arts; an American Choreographer's Award from The National Corporate Fund; the Paul Taylor Fellowship from The Yard; and the Metropolitan Life Foundation's Emerging Artist Award.

Performances are made possible in part by the generous support of the Missouri Arts Council, a state agency, and the Regional Arts Commission, St. Louis.

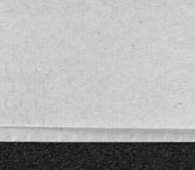
Shapiro & Smith Dance will help launch the spring semester with a trio of January performances co-sponsored by Dance St. Louis and the Edison Theatre OVATIONS! Series. Shows begin at 8 p.m., Jan. 19 and 20, and at 2 p.m., Jan. 21. Edison Theatre is located in Mallinckrodt Center, 6445 Forsyth Blvd. Tickets are $25 for the general public and are available at the Edison Theatre Box Office, (314) 935-6543, the Dance St. Louis Box Office, (314) 534-6622, or through MetroTix, (314) 534-1111. Call for discounts. For more information, call (314) 935-6543.

Violent Universe • Peptidomimetics • Racial Healing • Shapiro & Smith Dance

"University Events" lists a portion of the activities taking place at Washington University Dec. 15-Jan. 24. Visit the Web for expanded calendars for the School of Medicine (medschool.wustl.edu/events/) and the Hilltop Campus (cf6000.wustl.edu/calendar/events/).

Exhibitions

"Advocates for Change: 75 Years of Journalism and Social Work." St. Louis Post-Dispatch editorial cartoon exhibit. George Warren Brown School of Social Work 75th anniversary event. Through Dec. 15. GWB Library, Brown Hall. 935-4780.



'Twenty-one Years of Books." Through Dec. 31. Ken Botnick, assoc. prof. of art. Sponsored by Olin Library Special Collections. Fifth floor Olin Library. 935-5495.

'Relationships." Through Jan. 1. SEEN, a group of young artists from WU's School of Art. Co-sponsored by the School of Art and Center of Technology Management. First Site gallery, Center of Technology Management, 724 S. Euclid Ave. 747-0920.

Lectures

Friday, Dec. 15

9:15 a.m. Pediatric Grand Rounds. "Glaucoma in Infants and Children." Michael A. Kass, prof. and chair of ophthalmology and visual sciences. Clopton Aud., 4950 Children's Place. 454-6006.

7:30 p.m. St. Louis Astronomical Society lecture. "The Invisible Violent Universe." Wayne Clark, St. Louis Astronomical Society. Co-sponsored by earth and planetary sciences and NASA's Missouri Space Grant Consortium. Room 162 McDonnell Hall. 935-4614.

Monday, Dec. 18

Noon. Lung biology conference. "Epithelial Cell Mechanisms for Clearance of Haemophilus Influenzae From the Airway." Dwight C. Look, asst. prof. of medicine. Room 801 Clinical Sciences Research Bldg. 362-8983.

Noon-1 p.m. Molecular biology and pharmacology seminar. "Regulation of Secondary Lymphoid Tissue Follicle Structure and Function by Lymphotoxin." David D. Chaplin, prof. of medicine, genetics and molecular microbiology. Room 3907 South Bldg. 362-2725.

4 p.m. Immunology Research Seminar Series. "*In Vivo* Functions of Natural Killer Cells." Wayne M. Yokoyama, the Sam J. Levin and Audrey Loew Levin Prof. of Research in Arthritis and prof. of pathology. Eric P. Newman Education Center. 362-2763.

Wednesday, Dec. 20

6:30 a.m. Orthopaedic surgery distinguished lecture. "Health Care in the Millennium." James Weinstein, prof. of orthopaedic surgery, dir. of Multidisciplinary Spine Center, Dartmouth-Hitchcock Medical Center, Lebanon, N.H. Scarpellino Aud., first floor, 510 S. Kingshighway Blvd. 747-2562.

Thursday, Dec. 21

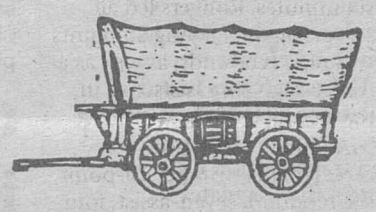
11 a.m. Pulmonary and Critical Care Medicine Grand Rounds. "Pulmonary Infections and Inflammation in Cystic Fibrosis." Thomas W. Ferkol Jr., assoc. prof. of pediatrics and cell biology. East Pavilion Aud., Barnes-Jewish Hosp. Bldg. 362-6904.

Tuesday, Jan. 2

4 p.m. Bioorganic Chemistry Seminar Series. "From Peptidomimetics to Radical Cations: Anodic Electrochemistry As a Tool for Constructing Organic Molecules." Kevin D. Moeller, prof. of chemistry. Room 3907 South Bldg. 362-3363.

Thursday, Jan. 4

11 a.m. Pulmonary and Critical Care Medicine Grand Rounds. "Evaluation of Lung Cancer With Positron Emission Tomography." Farrokh Dehdashti, assoc. prof. of radiology. East Pavilion Aud., Barnes-Jewish Hosp. Bldg. 362-6904.



Friday, Jan. 5

6 and 8:30 p.m. Travel Lecture Series. "Emigrant Road: An Oregon Trail Adventure." James Tompkins. Cost: $5. Graham Chapel. 935-5212.

Monday, Jan. 8

4 p.m. Immunology Research Seminar Series. "IFNg From Signaling to Surveillance." Robert D. Schreiber, prof. of molecular microbiology; Alumni Prof. of Pathology and program leader, tumor immunology, Alvin J. Siteman Cancer Center. Eric P. Newman Education Center. 362-2763.

Wednesday, Jan. 17

3 p.m. Public Interest Law Speakers Series. The Martin Luther King Jr. Commemorative Address. "Racial Healing." Harlon Dalton, prof. of law, Yale Law School; author; board of dir., American Civil Liberties Union; former asst. to the solicitor general; former member, Nation Commission on AIDS. Sponsored by The Black Law Students Assoc. Bryan Cave Moot Courtroom, Anheuser-Busch Hall. 935-6474.

Monday, Jan. 22

4 p.m. Immunology Research Seminar Series. "Control of Autoimmunity by Regulatory T Cells." Ethan M. Shevach, cellular immunology section, National Insts. of Health. Eric P. Newman Education Center. 362-2763.

Tuesday, Jan. 23

Noon. Molecular Microbiology and Microbial Pathogenesis Seminar Series. "Molecular Pathogenesis of Pneumococcal Infection." Elaine Tuomanen, chair of infectious diseases dept., St. June Children's Research Hosp., Memphis, Tenn. Room 775 McDonnell Medical Sciences Bldg. 362-3692.

On Stage

Friday, Jan. 19

8 p.m. OVATIONS! Series. Shapiro & Smith Dance. (Also Jan. 20, same time, and Jan. 21, 2 p.m.) Cost: $25, $20 WU faculty, staff and senior citizens, $12 WU students and children. Co-sponsored by Dance St. Louis master class. Edison Theatre. 935-6543

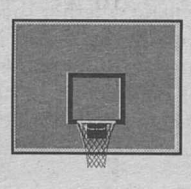
Sports

Saturday, Dec. 16

6 p.m. Women's basketball vs MacMurray College, Jacksonville, Ill. Athletic Complex. 935-5220.

8 p.m. Men's basketball vs. MacMurray College, Jacksonville, Ill. Athletic Complex. 935-5220.

Friday, Dec. 29



6 p.m. Women's basketball vs. U. of the South, Sewanee, Tenn. Athletic Complex. 935-5220.

8 p.m. Men's basketball vs. Blackburn College, Carlinville, Ill. Athletic Complex. 935-5220.

Friday, Jan. 12

6 p.m. Women's basketball vs. U. of Chicago. Athletic Complex. 935-5220.

8 p.m. Men's basketball vs. U. of Chicago. Athletic Complex. 935-5220.

Friday, Jan. 19

6 p.m. Women's basketball vs. Brandeis U., Waltham, Mass. Athletic Complex. 935-5220.

8 p.m. Men's basketball vs. Brandeis U., Waltham, Mass. Athletic Complex. 935-5220.

Sunday, Jan. 21

1 p.m. Men's basketball vs. NYU. Athletic Complex. 935-5220.

3 p.m. Women's basketball vs. NYU. Athletic Complex. 935-5220.

Worship

Friday, Dec. 15

11:15 a.m. Catholic Mass. Catholic Student Center, 6352 Forsyth Blvd. 935-9191.

1:10 p.m. Muslim Friday prayers. Includes sermon and prayer service. Lambert Lounge, Mallinckrodt Student Center. 935-3543.

Sunday, Dec. 17

11 a.m. Catholic Mass. Last Mass for semester. Catholic Student Center, 6352 Forsyth Blvd. 935-9191.

Saturday, Dec. 24

4:30 p.m. Christmas Eve Mass. Catholic Student Center, 6352 Forsyth Blvd. 935-9191.

Friday, Jan. 19

11:15 a.m. Catholic Mass. Catholic Student Center, 6352 Forsyth Blvd. 935-9191.

1:10 p.m. Muslim Friday prayers. Includes sermon and prayer service. Lambert Lounge, Mallinckrodt Student Center. 935-3543.

And more…

Friday, Dec. 15

4 p.m. Memorial service for Prof. David Belmont. Sponsored by Dept. of Classics. Graham Chapel. 935-5123.

Tuesday, Jan. 9

2 p.m. Teaching Center workshop. "Mail Merge/Envelopes and Labels." Microsoft Word 97. Room 14 Eads Hall. To register, call 935-4252.

Wednesday, Jan. 10

10 a.m. Teaching Center workshop. "The 10-minute Course Web Page." Liz Peterson, assoc. dir. for instructional technology, Teaching Center. Room 14 Eads Hall. To register, call 935-4252.

Thursday, Jan. 11

9 a.m. Teaching Center workshop. "The Web As a Teaching Tool." Liz Peterson, assoc. dir. for instructional technology, Teaching Center. Room 14 Eads Hall. To register, call 935-4252.

DAVID KILPER

Construction started earlier this year on two small-group housing facilities and two fraternity town houses in the northwest corner of the Hilltop Campus. Approximately 425 students will be moving into the four new buildings by August 2001.

Small-group housing to open in 2001

BY NEIL SCHOENHERR

Approximately 425 students will move Aug. 19 into two new residential facilities and two new fraternity town houses at the Hilltop campus's northwest corner.

The new campus community created by the two residential facilities will be the center of small-group housing, which will introduce the University to a different living style for students and will help blur the lines between academic and residential life. The two buildings have been designed to house students in groups of four to 32 with similar academic and professional interests.

The goals of this living system are to foster a seamless living and learning environment, to complement the curriculum and in-class learning, to enrich students' intellectual life and cultural experiences and to encourage collaborative and interdisciplinary learning.

"The advantage is that we are able to decrease the separation between the classroom and the living environment," said James W. Davis, Ph.D., professor of political science in the School of Arts & Sciences, director of the Teaching Center and chair of the small group housing committee.

Denizens of the small-group housing could include an astronomy group a Spanish group, students writing theses in a common discipline, performance groups, computing groups, or seniors interested in certain careers. The possibilities are as diverse as the students who attend the University.

"We really wanted to offer upper-class students another on-campus housing option," said Justin X. Carroll, assistant vice chancellor for students and dean of students. "We also see this as an opportunity to involve students and faculty in meaningful ways by blending the in-classroom and out-of-classroom experience."

The two buildings, which have not yet been named, will be well-furnished when they open in August. The complex will have its own food service with both large and small dining areas. The buildings will also include special practice rooms and performance spaces, meeting rooms, common rooms, study areas and classrooms. There will be an on-site staff and a small budget to support special projects and programs for the residents.

Student groups wishing to participate in the small-group housing plan will have the opportunity to apply in early February. The decision regarding which groups to accept will be made shortly thereafter.

> "Through this program we will be able to enrich intellectual life in the residential context and enrich the learning experience for students."
>
> JAMES W. DAVIS

Small-group housing is present at other universities, including Penn State and Northwestern.

"Through this program we will be able to enrich intellectual life in the residential context and the learning experience for students," Davis said.

Beta Theta Pi, currently residing in fraternity house 1, off-campus Tau Kappa Epsilon, Alpha Epsilon Pi and Sigma Phi Epsilon will reside in the new fraternity town houses.

Alpha Epsilon Phi's and Sigma Phi Epsilon's current houses will be torn down in the next three years, according to Karin Horstman, coordinator for Greek life.

An informational Web site on small-group housing is coming online in January. For more information contact Carroll at 935-5090 or Davis at 935-5828.

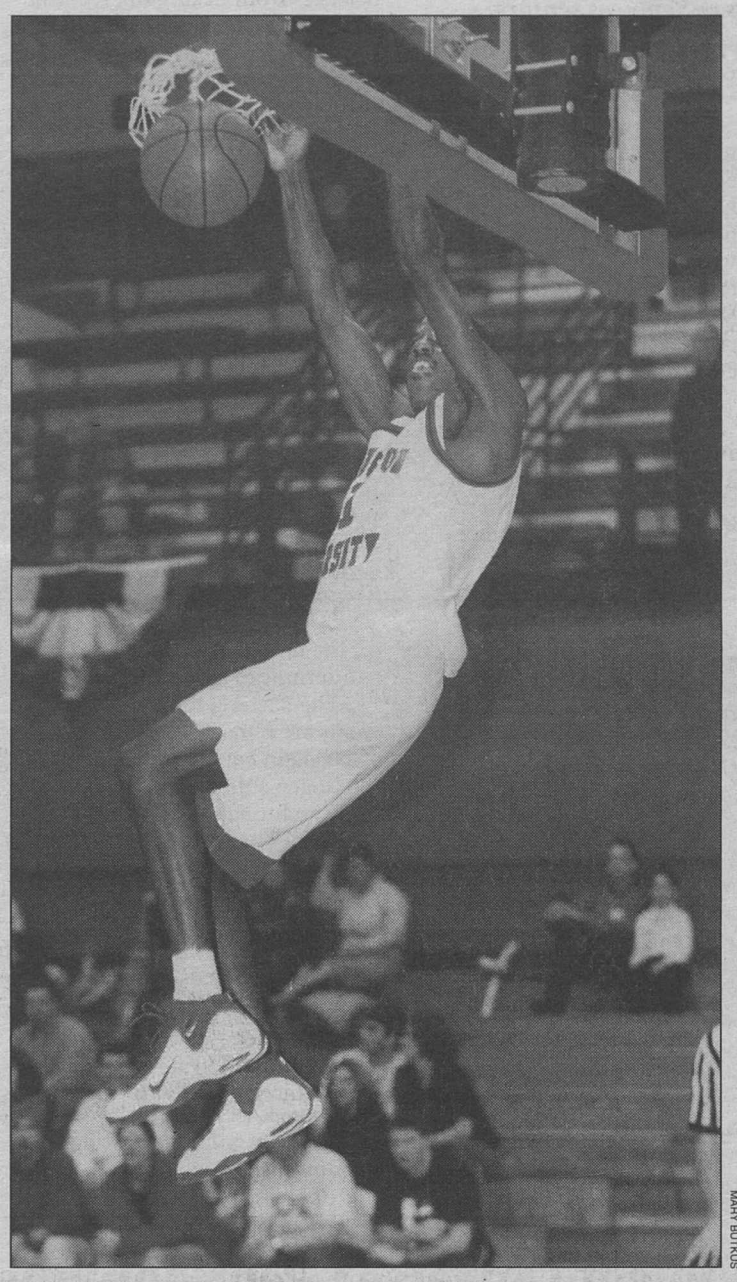
Sports Section

The streak rolls on

The Washington University women's basketball team continued to ride the high-wire act they call the streak with two hard-fought wins last week. Beginning with Johns Hopkins University at home Dec. 8 and following up with Blackburn College on the road Dec. 9, the Bears scraped out two wins in games where they led by just one point at halftime.

The Bears led 27-26 heading into the locker room against the Blue Jays, shooting just 34 percent in the first stanza. The Bears halftime wake-up call worked, and they awoke from their slumber to shoot 52 percent in the second half and outscore the Blue Jays 17-4 from the free-throw line. Tasha Rodgers led all scorers with 23 points, while senior center Lindsey Merrill tied her career-high with 18 points. Jennifer Rudis set a career-high with 11 points.

Against Blackburn, the Bears jumped out to an early 7-0 lead, not allowing a Beaver player to score until nearly four minutes into the game. Blackburn recovered, going on its own 7-0 run to tie the game. Trailing by four with just moments to go before halftime, Beaver guard Nicole Gladish launched a 40-foot three-point attempt that swished as the buzzer sounded, making the score 33-32 at the break. Again, the Bears came out in the second half with fresh legs and went on a 13-4 run in the first six minutes. Rodgers led all scorers again, tallying 25 points and nine rebounds, as well as a career-high six assists, five in the second half. Senior guard Sara Ettner set or tied four career-highs with her 15-point, six-rebound, seven-assist, four-three-pointer performance.



MARY BUTKUS

Bears senior forward Chris Alexander slams home two points.

Men's hoops handed first loss

The Washington University men's basketball team matched the 1923-24 squad for the best start in team history, improving to 8-0 with wins over Maryville University, 77-63 Dec. 5, and Johns Hopkins University, 82-64 Dec. 8. The Bears were bidding for their first 9-0 start, but Illinois Wesleyan handed WU its first loss, a 94-86 setback Dec. 10 in Bloomington, Ill.

Against Maryville, the Bears jumped out to an early lead and stretched the margin to 45-30 at halftime. WU pushed the lead to 52-30 with a 7-0 run to start the second, but the Saints cut the margin to 65-58 with 4:46 left. Washington answered with a 12-2 run to put the game away. Sophomore Jarriot Rook tied his career-high with 18 points and added 11 rebounds and three blocks. Dustin Tylka had 15 points, Chris Alexander had 14 points and Chris Jeffries, had 10 points, nine rebounds and a career-high six assists.

Johns Hopkins jumped out to an early 18-10 lead before WU rebounded to take a 33-29 lead into halftime. The Blue Jays trimmed the margin to four at 50-46 with 13:04 left, but it was as close as they would get as WU pulled away for the 18-point win. Tylka led all scorers with 18 points, while Alexander tallied 15 and added a career-high 12 rebounds and a career-high seven assists. Sophomore Nick Geurts scored a career-high 13 points and Ryan Patton dished a game-high eight assists.

Illinois Wesleyan wasted no time getting started as the Titans jumped to a quick 6-0 lead before pushing the margin to as much as 15 en route to a 52-43 halftime lead. WU shot a blistering 63 percent in the first half, but IWU countered with 58 percent shooting and a four-of-six effort from beyond the arc. WU would get as close as 60-57 early in the second half, but would get no closer the rest of the way. Alexander led all scorers with a season-high 27 points, along with seven rebounds. Patton had 15 points and six assists and Jeffries tallied 13 points. Joel Parrott grabbed a career-high eight rebounds.

MARY BUTKUS

Manners, please! **Students learn how to conduct themselves during a business dinner at the Olin School-sponsored Etiquette Dinner. They enjoyed a four-course meal while receiving tips on dinner conversation and table manners.**

Rhodes

Arts & Sciences seniors receive Rhodes Scholarships

— from page 1

National Soccer Coaches of America Association/Adidas All-Midwest scholar-athlete second team selection in 1999, as well as being named a GTE Academic All-American, an All-University Athletic Association (UAA) selection, a two time all-UAA selection and a three-time all-UAA academic selection.

"The one accomplishment that I am very proud of here at Washington University is being named an academic all-American," Klaus said. "That balance between academics and athletics was something I felt was important and worked hard to achieve."

Johnson, a senior in Arts & Sciences from Lexington, Ky., will use the $32,000-per-year stipend to study philosophy, politics and economics at Oxford. Johnson is completing a double major in mathematics and environmental studies, with much course work also in the earth and planetary sciences department.

Her NASA research related to upcoming Mars missions has led to several scientific publications and presentations during the past three years. Johnson spent a semester in Costa Rica studying complex biological systems while living in different parts of the rainforest. She is currently finishing honors thesis work involving microbes in the extreme environment at the summit of Mauna Kea, Hawaii, a Mars analogue site.

Sarah has done an impressive array of work with NASA in her University career. She held a NASA Space Grant Consortium internship after her freshman year, and after her sophomore year was selected for the NASA Academy, a summer program involving 12 students nationwide. Sarah met NASA scientists and astronauts and conducted independent research in the Mars Wind Tunnel at Ames Research Center. She was involved with NASA Discovery mission design at the Jet Propulsion Laboratory after her junior year, and will complete an internship at NASA Headquarters this summer as part of the Truman Summer Institute.

Last year, Johnson also won the prestigious Harry S. Truman Scholarship for public service her senior year and one year of graduate study. She is a volunteer for Special Olympics and coordinates the Natural Ties Program, which pairs adults with mental disabilities in the St. Louis community with Washington University students. In her spare time, she enjoys backpacking, running, writing and traveling.

Johnson participated in the Hewlett Program, a special curriculum allowing students the chance to specialize in topics and to examine them from many different academic perspectives. She was also a Goldwater Scholar and a University Compton Scholar.

"It's more an opportunity than an achievement," Johnson said of her scholarship. She will study philosophy, politics and economics at Oxford because she aspires to be an astronaut and planner of space missions, as well as a leader in developing international initiatives to further the exploration of the cosmos.

"Space missions are just as much driven by policy and economics as they are by science," Johnson said. "Studying theories in these subjects will give me a framework from which to make decisions as a leader at NASA."

Raymond E. Arvidson, Ph.D., the James S. McDonnell Distinguished University Professor and chair of earth and planetary sciences, is Johnson's mentor in planetary science and environmental studies.

"Sarah is representative of the best kind of student Washington University offers the world," Arvidson said. "She's very bright, very committed and intellectually curious. She is the type of person who makes classes fun for both the teacher and her fellow students. We're very proud of Sarah, and certain that she will make many contributions to science and society."

Deep-sea vents

Professor descends to ocean floor

— from page 1

than 100 spectral bands, as opposed to the three broad, overlapping bands resolved by a typical color camera and the human eye. Microscopy hyperspectral data provide highly detailed color information about objects and organisms that would otherwise remain indiscernible to the human eye.

Smith has used hyperspectral imaging technology in collaborations with NASA and others in remote sensing of a variety of objects, including planets and meteors, the Earth's atmosphere, agricultural crops, ocean reefs and diverse geochemical features.

Smith, in Alvin's tiny cockpit, was accompanied by an experienced pilot and another biologist in addition to a host of monitors, switches, gauges, and other equipment, including the hyperspectral imager. After the long, spiraling descent to the ocean floor, Smith and the others had five hours in total darkness to locate the vents and to conduct a variety of experiments, many of them for scientists anxiously waiting on the surface. Because the battery-powered Alvin has a dive duration of six to 10 hours, Smith had only about an hour to conduct his own experiments, which included obtaining spectra of the unique biological communities at the vents.

The bacteria found at the vents are remarkable in that their main energy source is hydrogen sulfide, a compound toxic to humans and other animals. The bacteria thrive in sulfur-rich water surrounding the vents — which ranges from 375 degrees C at the vent itself to just above freezing (2 or 3 degrees C) only a few inches away — by transforming the abundant sulfur there into a usable energy source, a process known as chemosynthesis. The bacteria don't need solar energy, unlike nearly all other biological communities, which use the sun for photosynthesis.

There is some evidence of chlorophyll, the pigment used with solar radiation in photosynthesis, in the vent bacteria. This raised the question of whether the chlorophyll is from the surface or are vent organisms incorporating photosynthetic material in a useful way.

Smith conducted three experiments to see how organisms were using photosynthetic material. He used the hyperspectral imager to record the amount of ambient light released from the thermal energy at the vent and to see how much of this light is in the right wavelength for photosynthesis (500-700 nanometers). He then illuminated the area with blue light and recorded the protein fluorescence characteristics of the organisms present. Finally, he illuminated the area with white light and recorded spectral characteristics over a broad spectral band. Results of these experiments will be presented in April in a symposium titled "Biology in Extreme Environments" at the spring meetings of the American Chemical Society.

Future research involves very detailed investigations of deep-sea vent biological communities, a challenging proposition because this requires fine-scale observations that require more time than the sub can remain on the sea floor. To meet this challenge, Smith is developing external sensors that could be placed directly on the sea floor near a vent and left for long-term observations, up to a year or even longer.

"These vents are very dynamic geological features," Smith said. "We need to collect data over a period of time to see what is really going on."

As for coping with the chummy confines of Alvin, Smith remains undaunted.

"I'm not claustrophobic, so the tight quarters didn't bother me in the least," he said. "On your way down and back up you see incredible fauna, and once we got near the vents I was so busy conducting the experiments that the time flew. The only part of the expedition that was uncomfortable was the boat ride out to where we were going to make our descent. The waters were rough and I got a bit seasick. I'm really looking forward to going on Alvin again."

Committee helps students succeed in scholarship and fellowship opportunities

News this week that two Washington University students have been named as Rhodes Scholars marks the latest in a series of successes for a relatively new committee that helps students pursue prestigious post-graduate scholarship and fellowship opportunities.

"It is an extraordinary honor for any university to have two students win Rhodes Scholarships in the same year," said Ryan K. Balot, Ph.D., assistant professor of classics in Arts & Sciences and chair of the University's Committee on Named Scholarships and Fellowships. "It reflects well both on the individual student's talent and hard work and on the institution and its ability to attract first-rate students and help them develop."

The committee was formed several years ago at the suggestion of James E. McLeod, vice chancellor for students and dean of the School of Arts & Sciences. Michael Cannon, executive vice chancellor and general counsel, served as founding director of the committee.

Sharon Stahl, Ph.D., associate dean in the School of Arts & Sciences, also has been active in the effort, which involves making students aware of scholarship opportunities, identifying students with potential and assisting them through the application process.

In addition to the Rhodes Scholarship awarded to seniors Ian Klaus and Sarah Johnson (see related story), the University also had a student selected for a Rhodes award last year. Ben Cannon, another Arts and Sciences major who graduated in 2000, is now pursuing his studies at Oxford University as a Rhodes Scholar.

"This marvelous recognition of our outstanding students represents yet another byproduct of Washington University's commitment to 'accelerating its ascent among the world's premier universities,'" Cannon said.

The committee has helped place several students in the Fulbright, Mellon and Truman scholar programs and, recently, has helped students earn selection for the Beineke Brothers Memorial Fellowship and the (British) Marshall Fellowship. It has worked with other students in applying for Goldman and Udall scholarships and is pursuing strategies for the recently announced Bill Gates scholarship program.

Balot said it was not unusual for universities to offer guidance to students seeking top scholarships, especially at universities like Washington University where many students are of a caliber to compete well for these awards.

"Washington University should be getting these kinds of student awards, given the quality of our students and the willingness of our faculty to encourage them throughout their careers here," Balot said. "Our students' success in being selected reflects well on Washington University's status as a leading and ambitious institution of higher learning."

Both Balot and Cannon are former recipients of Rhodes Scholarships. Many of the committee's other members, mostly University faculty, administrators and alumni, also have been recipients or applicants to one or another of these highly coveted scholarship programs.

Among those participating in recent mock interview sessions for the Rhodes and Marshall scholarships are **Frank C.P. Yin,** M.D., Ph.D., the Stephen F. and Camilla T. Brauer Professor of Biomedical Engineering; **Trina Williams,** a 1992 graduate who returned to the University after her Rhodes Scholarship to pursue doctoral studies at the George Warren Brown School of Social Work; **David Konig,** Ph.D., professor of history in Arts & Sciences; **Lisa Baldez,** Ph.D., assistant professor of political science in Arts and Sciences; **Susan Irene Rotroff,** Ph.D., professor in the Department of Classics in Arts and Sciences, and the first Jarvis Thurston and Mona Van Duyn Professor in the Humanities; **Robert E. Hegel,** Ph.D., professor of Chinese in Asian and Near Eastern languages in Arts & Sciences; **Joseph Loewenstein,** associate professor of English in Arts & Sciences; **William P. Darby,** associate vice chancellor for students; **Jay R. Turner,** D.Sc., associate professor of chemical engineering in the School of Engineering & Applied Science; **Randolph Pope,** Ph.D., professor of Spanish and Comparative Literature in Arts & Sciences; **Pam Lokken,** director of community and government relations; and **Mark Siedband,** an alumnus and former administrator of the University and a past recipient of the Truman Scholarship.

For more information on the committee and its activities, please contact Balot at 935-4770.

Employment

Use the World Wide Web to obtain complete job descriptions. Go to **https://hr.wustl.edu/ (Hilltop)** or **http://medicine.wustl.edu/wumshr (Medical)**.

Hilltop Campus

Information regarding positions may be obtained in the Office of Human Resources, Room 130, West Campus. If you are not a WU staff member, call 935-9836. Staff members call 935-5906.

Science/Engineering Librarian 990364

Lab Technician III 000241

Department Secretary 000251

Research Technician 000256

Sr. Research Assistant/Jr. Research Associate 000297

Department Secretary 000323

Research Assistant 000341

Facilities Administrative Coordinator 000351

General Services Assistant 000377

Word Processing Operator 010013

Department Secretary 010016

Retention and Academic Adviser 010017

Research Assistant 010023

Manager, Business Development 010026

Administrative Secretary 010032

Instructional Technology Specialist 010033

Associate Director of Development 010045

Media Adviser 010060

Research Technician 010061

Financial Analyst 010066

Senior Regional Director of Major Gifts 010068

Director of Admissions and Marketing 010069

Department Secretary 010070

MBA Records Assistant 010076

Medical/Research Assistant 010084

Department Secretary 010097

Student Services and Program Coordinator 010100

Associate Director of Research Communications 010107

Senior Medical Sciences Writer 010108

Mechanic (Bargaining Unit Employee) 010111-2

Coordinator-Student Services 010113

Assistant Director Donor Relations for Stewardship 010114

Receptionist/ Secretary 010121

Department Secretary 010123

Administrative Coordinator, Non-Degree Executive Education Program 010124

Director of News & Information for Olin School of Business 010126

Appointment Coordinator 010128

Research Assistant/ Technician 010129

Deputized Police Officer 010131, 010133

Sales Associate (part time) 010134

Accounting Manager 010137

Administrative Assistant II 010138

Research Assistant 010140

Assistant Laboratory Preparation Specialist 010141

Assistant Dean and Academic Coordinator 010142

Accounts Payable Rep Trainee 010144

Software Engineer Systems Services 010145

Coordinator, Programming and All Campus Events 010146

Student Services Coordinator 010147

Director 010149

Admissions Assistant 010150

Sponsored Project Accountant 010151

Editor, Publications 010153

Financial Aid Coordinator 010155

Assistant Director of Development 010157

Switchboard Operator (part time) 010158

Reference Assistant 010159

Director of Capital Projects 010160

Assistant Director, Alumni & Parents Admission Programs 010164

Catalog Librarian 010166

Student Services Records Processor 010167

NIDA Center Coordinator 010169

Lan Engineer 010171

Deputized Police Officer 010172

Accounting Assistant II 010173

Coordinator, Donor Relations 010174

Administrative Assistant 010175

Assistant Director of Career Services 010176

Administrative Assistant I 010177

Database Manager 010178

Assistant Facility Manager 010179

Manager of Academic and Student Accounting 010180

Technical Associate Programmer 010181

Zone Supervisor 010182

Health Benefits Manager 010183

Director of MBA Student Services 010184

Administrative Assistant 010185

Business and Course Development Manager 010186

Career Development Specialist 010187

Medical Campus

This is a partial list of positions at the School of Medicine. Employees: Contact the medical school's Office of Human Resources at 362-7196. External candidates: Submit résumés to the Office of Human Resources, 4480 Clayton Ave., Campus Box 8002, St. Louis, MO 63110, or call 362-7196.

Payroll Assistant 010141

Systems Manager 010267

Research Technician 010440

Statistical Data Analyst 010553

Administrative Coordinator 010585

Editorial Assistant 010676

Managing Editor 010677

Grants/Budget Specialist 010696

Secretary III 010773

Insurance Billing and Collections Assistant II 010808

Research Technician II 010820

Notables

Speaking of

Carter C. Revard, Ph.D., professor emeritus of English in Arts & Sciences, will speak at the University of Tulsa's 160th commencement ceremony Dec. 16. Revard, a graduate of TU, is the author of numerous books including, "Family Matters, Tribal Affairs" and "Winning the Dust Bowl," and continues to do both scholarly research and creative writing in medieval and American Indian studies. …

Gershon J. Spector, M.D., professor of Otolaryngology traveled to Padua, Italy as an invited speaker at the International Consensus Congress on Supracricoid Laryngectomies this summer. He was a member of the roundtable discussions on the Indications of Supracricoid Laryngectomies as well as Management of Complications and Failures. He also served on the discussion panel regarding functional results of supracricoid laryngectomies.

Of note

Phillip E. Cryer, M.D., the Irene E. and Michael M. Karl Professor of Endocrinology and Metabolism and director of the Division of Endocrinology, Diabetes and Metabolism at Washington University School of Medicine, has received an honorary doctor in Medicine degree from the University of Copenhagen. Also director of the General Clinical Research Center at the School of Medicine, Cryer is a former national president of the American Diabetes Association, the 1994 recipient of the ADA's Banting Medal for Scientific Achievement and the former editor of Diabetes, the ADA's leading scientific journal. The degree recognized both Cryer's achievements in scientific research and his history of cooperation with scientists at the University of Copenhagen. The degree was conferred at the university's commemoration day on November 16, 2000. …

William Woodward, Director of the University's New Student Orientation and Parents Weekend Programs, has been named to the Board of Directors of the National Orientation Directors Association. …

Gruia-Catalin Roman, Ph.D., professor and chair of the Department of Computer Science, chaired the fourth International Conference on Coordination Models and Languages in Limassol, Cyprus. …

George C. Burris, director of off campus housing and **Laurie Reitman, M.D.,** director of University health services have been named to the administrative team of the Emergency Response Team Program. This group provides the lifesaving bridge during the first critical minutes it takes for advanced life support providers to arrive during a medical emergency, using automated external defibrillators and CPR-trained volunteers. **Libby Hill** is coordinating the program.

Loewenstein receives Governor's Award for teaching

By Donna Kettenbach

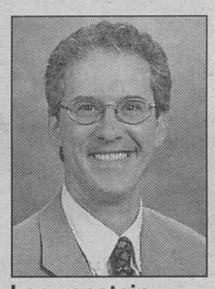
Joseph L. Loewenstein, Ph.D., associate professor of English in the School of Arts & Sciences, received the Governor's Award for Excellence in Teaching at the Governor's Conference on Higher Education last week.

The award provides the state an opportunity to recognize and honor outstanding Missouri faculty and symbolizes the governor's appreciation of educators. Recipients are selected based on effective teaching, effective advising, service to their university community, commitment to high standards of excellence and success in nurturing student achievement.

Loewenstein joined the English department in 1981 as assistant professor, was named associate professor with tenure in 1986 and served as department chair from 1992-95.

Loewenstein teaches at the undergraduate and graduate levels, focusing on the literature of the English Renaissance, Shakespeare, Spenser and the culture of the book.

His students say he brings an infectious love for literature and ideas to the classroom. They have responded with accolades in their evaluations of his classes, and honored him in 1993 with a faculty award for outstanding teaching given by the Council of Students of Arts & Sciences. He has received grants from the National Endowment for the Arts, ACLS and the Exxon Education Foundation.



Loewenstein: Honored professor

He teaches many courses in Renaissance literature and culture and will conduct a focus course, "Writers as Readers" next semester.

In addition to his teaching, Loewenstein is currently working with Arts & Sciences to implement revisions to its curriculum. The new curriculum will have a tremendous and long-lasting impact on the education of undergraduates. Loewenstein has worked closely with faculty in all Arts & Sciences departments and interdisciplinary programs to develop new courses, with technological experts who are redesigning the course registration system, and with undergraduate advisors, among many others.

Loewenstein earned a bachelor's degree in theater and in the College of Letters (literature, history, and philosophy) from Wesleyan University in 1974, a master's degree from Columbia University in 1975, and a doctorate in English from Yale University in 1982. He has published dozens of papers, and is a general editor of the forthcoming "Oxford Complete Works of Edmund Spenser." He has also written three books, the two most recent of which are, "Authorial Impressions: The Production of Intellectual Property in Early Modern England" and "Jonson and Possessive Authorship."

DAVID KILPER

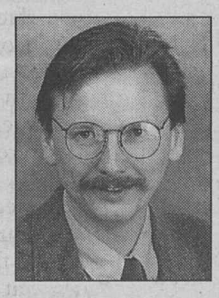
Model city Freshmen in the School of Architecture's Hewlett Program in Community Building, directed by associate professor Bob Hansman, were introduced this fall to some of the many ways architecture impacts its surroundings. The class touched on issues ranging from transportation, race relations and environmental concerns to history and economic pressures. By the end of the semester, they had constructed a model city designed to reconcile some of the frictions between individual rights with collective responsibility.

Campus Authors

Mark DeKay, assistant professor of architecture

Sun, Wind & Light: Architectural Design Strategies

***Mark DeKay,** assistant professor of architecture, has co-authored with G.Z. Brown of the University of Oregon a second edition of "Sun, Wind & Light: Architectural Design Strategies." The book, a primer on the relationship between energy use and architectural form, first appeared 15 years ago.*



"My purpose in writing this book is to help architectural designers who are not energy experts understand the energy consequences of their most basic design decisions and to give them information so that they can use energy issues to generate form rather than simply as limits that must be accommodated. It is not that energy is important in and of itself, but that the processes of making energy that depend on fossil fuels are damaging to the natural environment to which we are inextricably bound. So, in the long run at least, environmental cost equals social cost; conversely, environmental benefit equals social benefit. It seems then that energy issues should be of professional concern to architects, whose goal is to improve the quality of life.

"If energy is the concern, why cover only daylighting and passive solar heating and cooling? Certainly energy use in architecture can and should be addressed more broadly than it is in this book. My reason for narrowing the focus is to concentrate on the relationship between architectural *form* and energy use. Therefore, some important energy issues that don't have major architectural form consequences have been excluded. It also means that some architectural concerns have been addressed from an extremely narrow perspective. Daylighting, for example, which some say is the essence of architecture, is treated simply as a strategy for reducing electric lighting levels. It is because daylighting is of such broad concern in architecture that this narrow perspective is valuable: it lets the designer know both the good and bad energy consequences of certain approaches to daylighting and shows how those consequences change with building type and climate."

Students

Trek west in search of high-tech companies

— from page 2

— the Olin Marketing Association, the Technology Management Club and the Olin e-Commerce Club —each student pays a $50 fee, airfare, and expenses for lodging and meals. The Olin School provides organizational support, as well as ground transportation, and the symposium and reception Jan. 4.

The symposium, "Mobile Commerce for Financial Services," covering how financial services firms and their clients are and will be using the wireless web for transactions, is open to the public and is designed to appeal to professionals at financial services firms and investment banks, venture capital firms, software and service providers, trade magazines and other firms. Held from 4-7 p.m. at the Westin San Francisco Airport Hotel, in Millbrae, Calif., it will feature Bill Burnham, principal managing director, SOFTBANK Venture Capital, as keynote speaker. Panelists will include senior officers of Brience, Cisco Systems, Jupiter Communications, Palm, Yodlee and others. A networking reception will follow. The event is second in the Olin Digital Commerce Center's mobile commerce symposium series.

"By establishing the Center and providing networking opportunities for those in m-commerce, the Olin School is providing a vital leadership role for the next wave of the Internet — the wireless revolution," said Gregory Hutchings, executive director of the center and associate dean for the school, who spearheaded the event.

Campus Watch

The following incidents were reported to University Police **Dec. 6 – 12.** Readers with information that could assist in investigating these incidents are urged to call **935-5555.** This information is provided as a public service to promote safety awareness and is available on the University Police Web site at **rescomp.wustl.edu/~wupd.**

Dec. 6

2:05 p.m. — A student reported that his digital video camera, valued at $1,000, was stolen from the upper balcony of Graham Chapel between 9:50 p.m. and 10 p.m. Dec. 2.

Dec. 9

12:12 p.m. — A student reported that he has been receiving harassing telephone calls since October. Telephone services has been contacted and an invesitigation is continuing.

Dec. 11

5:23 p.m. — A student reported that an unknown person had broken the passenger side window of his Bronco and taken the facing off his Kenwood compact disc player, valued at $650, between 2 a.m. Dec. 10 and 2:15 a.m. Dec. 11.

University Police also responded to four additional reports of theft, two reports of vandalism, one report of suspicious persons and an automobile accident.

Washington People

DAVID KILPER

Computer science's Sally A. Goldman, Ph.D., reviews coursework with a student in engineering.

Computing academic excellence

Computer science's Sally A. Goldman, Ph.D., is a superior teacher, adviser, administrator and researcher

By Tony Fitzpatrick

Sally A. Goldman, Ph.D., does so many things so well, one might wonder if there's anything she can't do.

Goldman is an associate professor and assistant chair of the Department of Computer Science. More specifically, she's a key adviser for the department, a challenging graduate and undergraduate teacher, an internationally known researcher in computational learning theory, and a leader in professional organizations.

She's also bona fide soccer mom.

Goldman and her husband, Kenneth J. Goldman, Ph.D., associate professor of computer science, participate in many activities with their children, from hiking and biking to playing games and solving jigsaw puzzles. But Sally Goldman doesn't just take 13-year-old Mark and 9-year-old Ben to their myriad sporting events. Goldman coaches them in soccer, basketball and baseball through the Clayton Parks and Recreation programs. Three-year-old Julie waits in the wings.

As a junior at Ladue Horton Watkins High School in St. Louis County, Goldman had her hands full with academics and sports. She was on the varsity basketball, softball and tennis teams, and she also took a rigorous college-prep curriculum that included lots of mathematics. That school year, 1979-80, Goldman also got her first exposure to computing. Her school had computers tied to an off-campus mainframe, and during study halls Goldman began to experiment with a tool that was going to shape her future.

"I started programming in BASIC, and thought, 'Gee, this is a lot of fun,'" she said in her Jolley Hall office decorated with her children's vivid artwork. "Though I'd be afraid to look back at my code, back then I made a program that played a pretty good game of Othello.'

The enjoyment she got from programming games was the spark that led to her expertise today in computational learning theory, which studies the design and analysis of computer programs that have learning capabilities and identifies the limits to learning by computers. In this realm, Goldman works with learning models and develops basic algorithms, mathematical procedures that are devised to solve specific problems in a stepwise manner.

This is the front line of computer science, both theoretical and complex. The foundation that Goldman lays in devising and testing algorithms is crucial to the promising, exciting applications of machine learning.

These applications are abundant and diverse. They include natural language processing, pattern recognition, DNA analysis, information retrieval, data mining and drug discovery, plus many others, some still unforeseen.

"I've always loved the problem-solving and logical portions of mathematics, and from the beginning I've been intrigued with the idea of having a computer appear to think," Goldman explained. "The whole idea of designing a faster algorithm to find a better solution for a problem is what motivates me. I've always selected problems that helped reduce the gap between our theoretical models and the real-world problems that we aim to address."

To explain the task of supervised machine learning, Goldman offers the example of hand-written character recognition. A learning algorithm examines a set of hand-written characters with each specified by a set of attributes, for instance, the number of corners in the letter, along with the name, or label, for the intended character. Computer scientists often call the set of attributes the training data. The learner's goal is to efficiently construct a rule, often called a hypothesis or classifier, which can take some previously unseen character and determine the proper label with high accuracy.

> **"She is loved by students for the quality of her lectures, for the care she shows in advising, and for her championship of student causes. . . . It is really hard for me to imagine our department functioning as well without her."**
>
> Gruia-Catalin Roman

The same principle is applied to computational voice recognition, medical data analysis, and networking, among many others. Goldman has recently addressed problems in networking and robot navigation as well as semi-supervised learning tasks. Software that would be able to screen inappropriate Web pages and keep them from children is just one possible example of an application using Goldman's research.

In addition, Goldman and her group recently developed a general method of "co-training," where two independent learning algorithms are originally trained on labeled data. Each learner, using statistical techniques, selects some unlabeled data to label for the other learner. Goldman's results have been promising, for example, a number of her test data sets will aid in improving breast cancer diagnosis.

Similarly, she is investigating machine learning to develop a way to predict the shape of disease-receptor molecules. Knowing the shape of such molecules could accelerate the discovery process for new drugs and thus reduce costs.

In 1984, Goldman married Ladue High School classmate Ken Goldman, and she graduated with honors from Brown University. Sally and Ken Goldman both went to Massachusetts Institute of Technology in 1985 to pursue graduate work.

Famed cryptographer Ronald Rivest, Ph.D., was Sally's thesis adviser for her masters degree (1987) and doctorate. (1990), both in electrical engineering and computer science.

Goldman's professional activities can be divided into four parts: teacher, researcher, administrator and professional organization mainstay.

As a teacher, she has taught a vital array of courses, including courses in the formal foundations of computer science (CS 201); algorithms and data structure (CS 241); and advanced algorithms (CS 441T/539T). This spring she'll teach a new course in machine learning (CS 527A) that will be open to undergraduates and graduates.

She's a very popular teacher who won the Emerson Electric Company Excellence in Teaching Award in 1999. Goldman was named the School of Engineering and Applied Science's Adviser of the Year for three straight years (1996-99).

She is the adviser for about 45 students this year and estimates she informally advises about 100 students yearly.

As a researcher, she's highly acclaimed worldwide in her community of about 200 computational learning theory specialists, with more than 50 publications ranging from conference publications to referred journal articles to book chapters.

As assistant chair of the computer science department, she is involved with almost everything related to its educational mission.

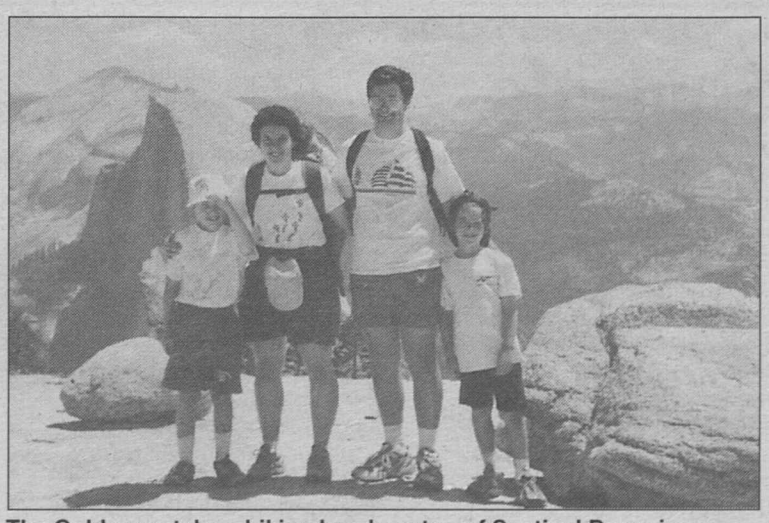
Recent commitments —heavy ones — are her prominent roles in professional societies. Goldman is on the editorial board of two journals. Last year she served as committee member for two different conferences, one of which, the Thirteenth Annual Conference on Computational Learning Theory (COLT), she co-chaired. The COLT conference was co-located with the International Conference on Machine Learning and the Uncertainty in A.I. Conference. Bringing the three groups together was a significant logistical undertaking.

Gruia-Catalin Roman, Ph.D., professor and chair of computer science, regards Goldman as an indispensable, dedicated faculty member.

"Sally Goldman is without doubt one of the most dedicated members of our faculty," Roman said. "She is loved by students for the quality of her lectures, for the care she shows in advising, and for her championship of student causes. Her research enjoys a great deal of visibility. Any task she attempts is always performed with the greatest of care. It is really hard for me to imagine our department functioning as well without her."

Goldman is vital to many of her departmental and professional functions, but it's clear that advising students is special to her.

"I try to help everyone see their strengths and help them find the right path for themselves," she said.



The Goldmans take a hiking break on top of Sentinel Dome in Yosemite National Park in the summer of 1999. From left are Mark, Sally, Julie (on Sally's back), Ken and Ben.

Sally A. Goldman, Ph.D.

Education Brown University, Sc.B., 1984; Massachusetts Institute of Technology, master's 1987, Ph.D. 1990

University position Associate professor and assistant chair of the Department of Computer Science

Family Husband, Kenneth J. Goldman, associate professor, Department of Computer Science; sons Mark, 13, Ben, 9; daughter Julie, 3

Honors Emerson Electric Company Excellence in Teaching Award, 1999; School of Engineering and Applied Science's Adviser of the Year, 1996-99