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COURTESY PHOTO

Pathfinder Program students (from left) Erin N. Robinson, Sarah E. Steinhardt and Natalie M. Karas use an emission spectrometer to measure heat signatures of in situ samples in southern Spain.

Pathfinder Program students analyze Mars-like minerals

By Tony Fitzpatrick

Red River is a famous Howard Hawks Western featuring a great cast of characters including none other than the Duke himself, and is quite a celluloid experience.

There is another "red river," though, featuring an even more impressive cast of characters — 10 WUSTL seniors and one sophomore in a supporting role in the University's Pathfinder Program — researching Rio Tinto in southern Spain — over an extended Labor Day weekend last summer.

The work conducted along the Rio Tinto was part of the Pathfinder Capstone Experience, a research-intensive field study conducted during the senior year as a set of coordinated research projects.

The students were under the guidance of Raymond E. Arvidson, Ph.D., the James S. McDonnell Distinguished University Professor and chair of the Department of Earth and Planetary Sciences in Arts & Sciences. They also worked with Thomas C. Stein, computer systems manager in earth and planetary sciences, two NASA scientists from Houston's Johnson Space Center and three Spanish scientists from the Center for Astrobiology in Madrid to understand the chemistry and mineralogy of the river.

The river runs red above the tidal zone because of the acid-sulfate dominated — and thus very acidic — waters. This unusual water system is a consequence of ground water emerging to the surface after percolating through ancient sea floor iron sulfide deposits. The effects are magnified by the extensive mining and processing of the sulfide ores.

"This is also of interest to us because the minerals we see at Rio Tinto also formed on Mars billions of years ago, based on the ancient shallow lake environment discovered from the *Opportunity* Mars rover measurements on the plains of Meridiani."

Raymond E. Arvidson

The Pathfinder Program is in the Division of Natural Sciences and Mathematics in Arts & Sciences and is designed to help shape the four-year undergraduate academic careers of students with a deep

See **Pathfinder**, Page 6

Scientists find receptor protein that synchronizes fruit fly's internal clock

By Michael C. Purdy

Scientists have identified a receptor protein that helps the fruit fly know when to start and shut down its day, a step that should help them learn more about internal clocks in higher organisms such as humans.

School of Medicine neuroscientists identified a receptor for pigment-dispersing factor (PDF) protein, which scientists previously had recognized as a molecule that helps keep different internal "clocks" synchronized.

"Daily rhythms regulated by biological clocks shape our lives in important ways, affecting a wide range of functions including sleep, body temperature, cognitive ability, mood and sensitivity to drugs," said Paul Taghert, Ph.D., professor of neurobiology. "Because these timekeeping processes have been highly conserved through evolution, what we learn from flies and other organisms often helps us better understand the same systems in higher organisms."

For example, studies of fruit flies have already helped scientists identify a human gene for advanced phase sleep syndrome, a human disorder that puts sufferers to sleep at what is normally dinnertime and promotes their waking at 3 a.m. or 4 a.m.

Lead author Taghert and his group was one of three to independently report identification of the PDF receptor in a recent issue of *Neuron*.

Taghert

Clock cells contain a handful of proteins that interact with each other in ways that increase and decrease their own levels in the cell at various times during the course of a day. The cycle naturally repeats itself every 24 hours.

Through their connections with other nerve cells and other types of tissues, clock cells regularly trigger or suppress certain physiological processes during the course of the day. Biologists call these daily patterns circadian rhythms.

See **Clocks**, Page 6

Forest Park Parkway to reopen by end of spring

By Andy Clendennen

Thanks to some mild temperatures this winter, Metro has made better-than-expected progress along Forest Park Parkway, which has been closed since spring 2003 due to the MetroLink expansion project.

The goal is to have the entire roadway — every lane in each direction — open for motor-vehicle traffic by the end of spring.

Much of the concrete has been poured along the route, and the next step in those areas will be the application of Superpave, the asphalt topping commonly used on major highways and interstates.

But using the higher-quality product also lends itself to a few more issues — mainly, that Superpave can only be paved in higher temperatures. The product is being used, for example, on the repaving of Interstate 55 — which stopped in the late fall and will resume in the spring.

Another issue with Superpave is that it is only produced at night.

"The Missouri Department of Transportation and St. Louis County generally require that surfacing and lane closures on major arterial roads and interstates can only be done at night," said Metro

See **Parkway**, Page 6

Popular Web site sheds light on meteorites

By Tony Fitzpatrick

The mysterious orb you find in your backyard that wasn't there just the day before has to be a meteorite, right?

Wrong. Overwhelmingly, the chances are it's a "meteorwrong," according to Randy Korotev, Ph.D., research associate professor of earth and planetary sciences in Arts & Sciences.

He says that of 1,000 meteorites, 998 are from asteroids, one is from the moon and the other one is from Mars. Of the hundreds of meteorites that have been found in the United States, none has been a lunar meteorite, and only one has been a Mars meteorite.

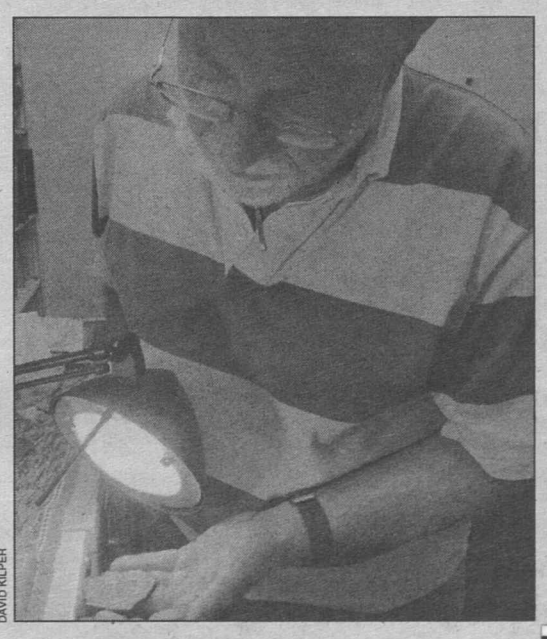
Korotev is a geochemist whose specialty is analyzing the chemistry of moon rocks, whether they have been gathered from the *Apollo* missions or collected as meteorites from Antarctica, north Africa or other areas of the world. In recent years, he's become the go-to guy for anybody — researcher, amateur or professional meteorite collector — who thinks he or she might have discovered a lunar meteorite.

This is largely because of a Web site (*epsc.wustl.edu/admin/resources/moon_meteorites*) Korotev started about 10 years ago, intending for it to serve his colleagues and the interested public. The site deals in great detail with lunar meteorites, and it is as good an educational resource on the topic to be found anywhere.

Due to very intelligent search engines and an aggressive (though little-known) profession of meteorite dealers and hobbyists — a lunar meteorite retails from $1,000-$40,000 a gram — Korotev's site began drawing questions from the public about the veracity of their findings.

Some people make appointments to see him and his WUSTL geologist colleagues, but the vast majority e-mailed pictures of their findings to get their answers. While he didn't keep count of all the contacts he received in the

See **Meteorite**, Page 6



DAVID KILPER

Randy Korotev, Ph.D., research associate professor of earth and planetary sciences in Arts & Sciences, examines fragments of the Sikhote-Alin iron meteorite that fell in Siberia in 1947. The sample is an actual meteorite, but Korotev regularly receives samples from meteorite enthusiasts that are not the real McCoy. Mistakenly identified meteorites have the moniker of "meteorwrongs."

Olin School portraits feature faculty distinctiveness

BY SHULA NEUMAN

The Olin School of Business has long known that business is an art. Now the school is demonstrating that link visually.

Through high-end photography now hanging in the hallways, the school is highlighting its professors and their research. It may sound mundane, but as Jan Broderick, the Olin School's visual program consultant and one of the organizers of the exhibit, said, "It's not your typical portrait style."

The school wanted a way to celebrate the professors' work in a way that is uniquely "Olin," said Broderick's co-organizer, Deborah Booker, associate dean and director of external relations at the business school.

"The photographs portray our faculty in distinctive ways on several levels," Booker said. "We wanted to create artwork that drew people to portraits for their distinctiveness as faculty, as human beings and as researchers."

Framed in quartersawn oak, the photographs are printed on watercolor paper, which softens the edges of images — in the same way that old movies filmed starlets through a layer of gauze.

A brief summary of the professors' latest research is underneath their image. The entire layout seems to float inside its frame.

The setting, however, is only one part of the effect. What really makes the pictures stand out is their content.

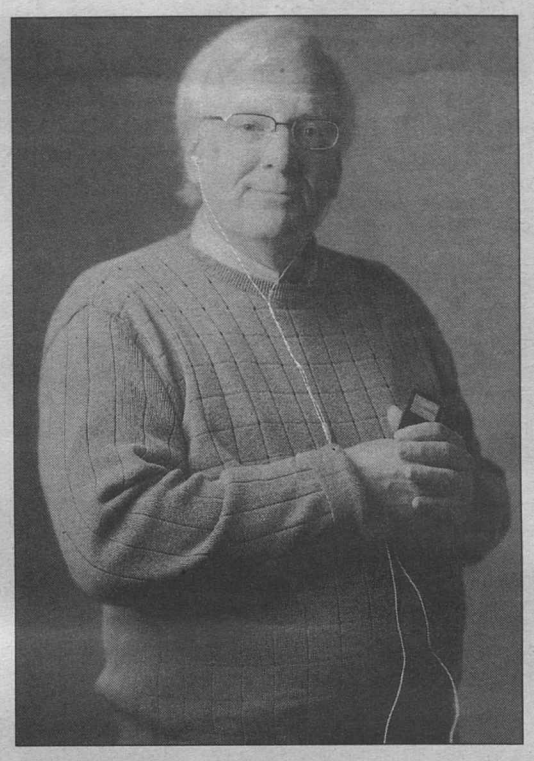
"Our goal was to have the professors in very natural poses that reflect each faculty member's individuality, while the description of their work reflects their intellectuality," Broderick said. "Basically, we told them they could wear whatever they wanted to. They knew they were going to get their picture taken, but that was about it."

Tat Chan, Ph.D., assistant professor of marketing, showed up wearing blue jeans, a brown shirt and a black windbreaker. Chan is very tall and thin, Broderick and Booker noted. Upon seeing him, they immediately thought: warrior.

His photograph shows him standing slightly sideways, hands disappearing into his jacket and the slightest smile on his face.

"We got this very striking, very stark picture of him because of his dark clothes and dark hair and he has very good bone structure," Broderick said. "It really captured a very individual look."

"Students have commented that they don't know who Tat Chan is, but he looks like a very interesting person," said Glenn MacDonald, Ph.D., senior associate dean and the John M. Olin Distinguished Professor of Economics and Strategy. "Typically, their next thought is, 'What does he teach?'"



DAVID STRADAL

Among the faculty images on display at the Olin School of Business is this one of Raymond T. Sparrowe, Ph.D., the Marcile and James Reid Professor and associate professor of organizational behavior. The photograph captures an aspect of his overall personality, and underneath it is printed an explanation of some of his recent research.

MacDonald was the instigator for having a display for professors and their research, but he didn't want anything generic. He wanted something that would jump out at anyone who walked into Simon Hall; something that captured the school's character.

"We're fundamentally a high-end research institution," MacDonald said. "I think of us as very imaginative, innovative, creative and deep.

"If we continue to invest in this artwork and expand its presence, just think of the impact it could have on prospective students, employers and alumni. They might walk into the school and say, 'This place is both gorgeous and intriguing.'"

Details of how frequently the photographs will change are still being worked out. For the next few months, people can see Chan's image in the Simon Hall foyer highlighting his work on understanding consumer choices for soft drinks; Raymond T. Sparrowe, Ph.D., the Marcile and James Reid Professor and associate professor of organizational behavior, and his research in leadership tactics that affect workers' behavior; and Tava Olsen, Ph.D., associate professor of operations and manufacturing management, and her studies on the setup time and costs for a multipurpose manufacturing machine.

Mahendra R. Gupta, Ph.D., dean of the Olin School and the Geraldine J. and Robert L. Virgil Professor in Accounting and Management, enjoys seeing the faculty and their research recognized in such an unusual manner.

"We have a strong group of research faculty at Olin," Gupta said. "They're recognized internationally for their expertise and innovative research.

"We want to celebrate them in our own building. We will continue to find new ways to applaud research success of our faculty."

Public-education expert Kozol to speak Feb. 22

BY NADEE GUNASENA

Jonathan Kozol, the nation's foremost authority on the state of public education in America, will give a talk on "The Hearts of Children and Obligations of Our Nation's Schools" for the Assembly Series at 11 a.m. Feb. 22 in Graham Chapel.

Over the past four decades, Kozol has sought to identify and correct social and educational inequality in America's public schools. In his new book, *The Shame of the Nation: The Restoration of Apartheid Schooling in America*, he exposes the high incidence of public-school resegregation in urban schools. Through exhaustive research in more than 60 schools in 11 states, Kozol exposes the glaring inequities between schools catering to minorities in dense cities, and predominantly white schools in suburbia.

Kozol

"(Public school resegregation) is a national horror hidden in plain view," he writes in *Shame of the Nation*.

According to his research, St. Louis has not been spared.

"In his book, he takes special note of St. Louis-area public schools as a place where inequality persists," said Garrett A. Duncan, Ph.D., associate professor of education and of African and African American Studies, both in Arts & Sciences.

Kozol's personal experiences illustrate the detrimental effects that these resegregation policies are having on African-American and minority students. Urban schools, with 90 percent of their student body composed of minorities, are found to be lacking fundamental basics such as good textbooks, clean classrooms and extracurricular activities.

Schools in these communities "must settle for a different set of academic and career goals," he writes.

A former educator himself, Kozol witnessed social injustice firsthand in the mid-1960s, when he began teaching at a Boston public school that catered to poor minority students. Soon, he was spearheading efforts to create "freedom schools" for African-American students during the Civil Rights Movement.

This was the first step in what became a lifelong commitment to fight for the right to adequate funding in education for the underprivileged. Since then, he has become a nationally recognized spokesperson for social reform.

In addition to *Shame of the Nation*, Kozol has authored numerous books that examine the interrelationships between race, poverty and education.

These include *Death at an Early Age*, recipient of the 1968 National Book Award in Science, Philosophy and Religion; *Illiterate American*; *Rachel and Her Children: Homeless Families in America*, recipient of the Robert F. Kennedy Book Award in 1989 and the Conscience in Media Award of the American Society of Journalists and Authors; *Savage Inequalities: Children in America's Schools*, a finalist for the 1992 National Book Critics Circle Award; and *Amazing Grace: the Lives of Children and the Conscience of a Nation*.

Kozol has received numerous awards, including two Guggenheim Fellowships.

He earned a degree in English literature from Harvard University and a Rhodes Scholarship.

Assembly Series lectures are free and open to the public. For more information, call 935-4620 or go online to *assemblyseries.wustl.edu*.

Spring social work lecture series under way Feb. 23

BY JESSICA MARTIN

Cutting-edge leaders in the fields of gerontology, child welfare and community justice are part of the George Warren Brown School of Social Work's spring lecture series.

"This series represents the rich diversity of the social work profession," said Barbara E. Levin, the series organizer and coordinator of the Alliance for Building Capacity at the School of Social Work. "Social work impacts many aspects of our lives, and these speakers are dedicated to moving society forward through research and into practice."

The first lecture, "Child Welfare Reform and Evidence-based Child Welfare Services: What Is Their Relationship?" by Richard Barth, Ph.D., the Frank A. Daniels Professor for Human Services Policy at the University of North Carolina, is at noon Feb. 23.

All lectures will be held in Brown Hall Lounge unless otherwise noted. Other talks are listed below.

- **Noon March 7:** Kevin Mahoney, Ph.D., associate professor of social work at Boston College, will speak about "Consumer-Directed Care."
- **Noon March 23:** Lesley Koplow, director of the Center for Creating Emotionally Responsive Practice at Bank Street College, will present "Treating Schools to Treat Children." This lecture is co-sponsored by the University City Children's Center and the St. Louis Psychoanalytic Institute.
- **4 p.m. April 6:** Duane Champagne, Ph.D., professor of sociology at the University of California, Los Angeles, will discuss "Community, Justice, Power and Indigenous States." Champagne is a faculty advisory committee member for the Native Nations Law and Policy Center.
- **11 a.m. April 19 in Graham Chapel:** Marian Wright Edelman, founder of the Children's Defense Fund, will present "Stand Up for Children Now." Edelman's presentation, the Benjamin E. Youngdahl Lecture in Social Policy, is co-sponsored by The Women's Society of Washington University, University Libraries, the Assembly Series and Student Union.
- **Noon April 26:** Edward R. Smith, Ph.D., rehabilitation program specialist for the U.S. Department of Education, will speak about "National Child-care/Child Welfare Issues and Perspectives." This lecture is co-sponsored by the Missouri Baptist Children's Home.

All lectures are free and open to the public. For more information, call Levin at 935-6661.

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Washington University in St. Louis

Campus Watch

The following incidents were reported to University Police **Feb. 8-14**. 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 *police.wustl.edu*.

Fraud alert:

University Police has recently noted several incidents where members of the campus community or others have lost money due to check fraud (particularly in transactions over the Internet or through the mail).

This typically occurs when the victim is sent a check or money order for an amount larger than the cost of the item or service being purchased or leased. The victim is asked to cash or deposit the check or money order and return the balance of the funds via Western Union or some other service. It is not until after the money has been forwarded that the victim learns that the original check or money order was fraudulent.

If you have any questions about a suspicious transaction or request, contact your bank, local police department or the Washington University Police Department.

Remember: If you are in doubt about a transaction, do not complete it.

University Police also responded to three reports of larceny, two reports of lost article and auto accident and one report of damaged property.

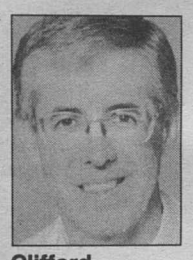
School of Medicine Update

Study eases concerns over mental side effects from potent AIDS drug

BY MICHAEL C. PURDY

The largest detailed, prospective clinical study of the mental side effects of a potent anti-AIDS drug, efavirenz, has revealed that the anxiety, dizziness, "funny feelings" and vivid dreams triggered by the drug fade away within a month, possibly clearing the way for more widespread use.

"Efavirenz is the first drug from its class that lasts long enough to be taken once a day, and that makes it a potentially valuable drug for AIDS treatment, " said the study's lead author, David B. Clifford, M.D., the Melba and Forest Seay Professor of Clinical Neuropharmacology in Neurology and professor of medicine at the School of Medicine.


Clifford

Clifford and other scientists at the University's AIDS Clinical Trials Unit (ACTU) studied 300 patients who were part of a larger multicenter trial. As a part of that study's protocol, patients were randomly and blindly taking either the anti-AIDS drug efavirenz or a placebo with alternative HIV therapy.

The findings were published in *The Annals of Internal Medicine.*

To keep the evasive virus that causes AIDS in check, patients take different types of drugs to impair or attack it on different fronts. Efavirenz was the first of a class of drugs known as non-nucleoside reverse transcriptase inhibitors that could be taken only once a day, which boosts the chances that patients will stick to the treatment regimen and keep the virus under control.

> **" ... We found that both the patients who took efavirenz and those who didn't had a similar improvement in performance that resulted from better suppression of HIV. Use of efavirenz was not associated with any decline in brain function."**
>
> DAVID B. CLIFFORD

However, there have been lingering concerns over the mental side effects of efavirenz, which begin soon after patients start taking it.

"Patients complain of 'feeling funny' or not feeling right almost with the first dose," Clifford said. "Given that a chronic disorder such as AIDS is already likely to be associated with serious neuropsychiatric conditions including depression and anxiety, this was leading some physicians to shy away from prescribing efavirenz when they would prefer to see the patient taking the drug."

Physicians and patients also were concerned about the potential for efavirenz's mental side effects to impair performance when driving a car, operating machinery or doing other complex tasks.

Clifford and his colleagues at the ACTU developed a questionnaire to assess efavirenz's effects on sleep and levels of depression and anxiety in a group evenly divided between patients taking efavirenz and patients taking a placebo. The patients took the survey one week, one month, three months and six months after they started treatment. They also took standardized tests of mental performance and response times.

"People who have a viral infection do suffer declines in brain function," Clifford said. "Treatment reverses those declines, improving performance, and we found that both the patients who took efavirenz and those who didn't had a similar improvement in performance that resulted from better suppression of HIV. Use of efavirenz was not associated with any decline in brain function."

Results from the questionnaire revealed no difference in depression between the group taking efavirenz and the group taking a placebo. The efavirenz group did have more anxiety, dizziness and vivid dreams after they began therapy, but those effects faded by the end of the first month.

"This drug really does do something in the brain, and we've had a very hard time determining how it causes these effects,"" Clifford says. "But the important thing is that the effects wash out in the first month of using the drug. People now can be told that the chances are very good that if they just can stick with this drug for a few weeks they shouldn't have ongoing problems."

Clifford hopes to collaborate with inner ear researchers to get a better feel for how efavirenz might trigger dizziness in the first month of use. He also is continuing to give his questionnaire to patients in the study group as they continue to take efavirenz.


ROBERT BOSTON

'Dem Bones' David Yawitz, executive officer of the Community Outreach Program of the Division of Geriatrics and Nutritional Science, explains results of a peripheral dual energy X-ray absorptiometry screening that measures Pauline Vivater's bone density. The X-ray equipment is connected to a laptop computer, which shows a color-coded image of the person's forearm revealing areas of high and low bone density. The screening took place at the Brentmoor retirement community in University City.

Heart failure linked to altered communication channels

BY GWEN ERICSON

Failing hearts develop interference in their communication channels, according to research conducted at the School of Medicine.

The problem involves a subtle change in the pores that connect heart muscle cells. When the scientists duplicated this change in mice, the mice became susceptible to ventricular tachycardia, a dangerous heart rhythm disorder that can lead to sudden cardiac death.

The research was published in the January issue of the *American Journal of Physiology-Heart and Circulatory Physiology.*

"We identified an alteration in heart cell connections when we studied muscle samples from the hearts of patients who had undergone heart transplants," said Kathryn A. Yamada, Ph.D., research associate professor of medicine in the Center for Cardiovascular Research. "We saw that these failing hearts had higher than normal amounts of a particular protein that is abundant in fetal hearts, but decreases as the heart matures. We found that it increases again in failing hearts."

The protein is part of the heart's system of signal conduction. In healthy hearts, the electrical signal required for the heart to contract properly propagates efficiently through pores called gap junctions that connect one muscle cell to another. Gap junctions are made of proteins called connexins. The abnormally abundant protein measured by Yamada and her colleagues is connexin45.

In healthy adult heart cells, the majority of gap junctions are made up of another protein called connexin43. But the researchers found that in failing hearts, connexin45 was present in gap junctions in amounts 80 percent higher than usual while connexin43 levels fell.

"It seems that connexin45 has the ability to form hybrid pores or gap junctions with connexin43, and that reduces the coupling between cells," Yamada said. "This abnormality in signal transmission may set up conditions for a re-entrant circuit — a situation in which the electrical signal that stimulates ventricular muscle contraction loops back instead of moving across the heart. This can cause abnormal heartbeats, or arrhythmias."


Yamada

The team engineered transgenic mice that overproduce connexin45 in their heart muscle. The heart cells of these mice showed altered cell communication, and the mice had an increased tendency to experience ventricular tachycardia, a potentially dangerous increase in the excitation and contraction rate of the heart's ventricles.

"Interestingly, it has been shown that the proteins that comprise gap junctions in the heart are replaced every few hours or so," Yamada said. "This rapid turnover means that small changes in the formation or degradation of connexins in response to injury or disease can affect the function of heart cells dramatically, making connexin expression a significant marker of heart health and disease."

Future studies in Yamada's laboratory will use voltage-sensitive dyes to map electrical activity, enabling the researchers to locate precisely alterations of electrical signals in the hearts of transgenic mice that have excess connexin45.

Powers named Hagemann professor of neurology

BY MICHAEL C. PURDY

William J. Powers, M.D., has been named the Charlotte and Paul Hagemann Professor of Neurology.

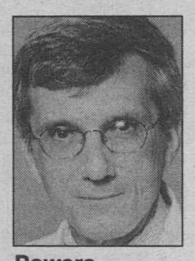
David M. Holtzman, M.D., the Andrew B. and Gretchen P. Jones Professor and head of the Department of Neurology, made the announcement.

Powers is head of the cerebrovascular disease section of the neurology department and a professor of neurological surgery and of radiology.

"Bill has been a world leader in trying to understand how normal regulation of brain blood flow and metabolism is disrupted by conditions such as stroke and Alzheimer's disease," Holtzman said. "Those conditions are the two leading causes of dementia in the United States, and the Hagemann chair is dedicated to supporting a researcher working on developing a better understanding of the underpinnings of dementia."

Powers said, "I'm extremely grateful to the Hagemanns for donating the funds to create this chair. It allows me to have the flexibility to pursue new and innovative ideas."

In addition to his work on stroke and dementia, Powers' studies have included efforts to identify differences in the way the infant brain uses oxygen and glucose. Improved understanding of those differences could provide significant help to efforts to prevent brain damage during the birthing process and at other points early in life.


Powers

"The brain of the newborn infant is very different than the adult brain in terms of its blood usage," Powers said. "It needs much less blood and seems to need very little oxygen — blood flows comparable to what the adult brain receives would be lethal to the infant brain."

Powers also studies the adult brain's use of oxygen and glucose. He is leading an investigation of whether abnormalities in the use of oxygen can contribute to the brain degeneration that occurs in Parkinson's disease and Huntington's disease. If so, drugs that correct those abnormalities might be useful in slowing the progression of the diseases.

Powers and a team of School of Medicine and Barnes-Jewish Hospital physicians are also leading a multicenter trial to see if physicians can use differences in measurements of brain oxygen consumption to select the right treatments to reduce risk in stroke patients.

Holtzman was the first faculty member to hold the Hagemann chair. When he became head of the Department of Neurology, he automatically became the Jones chair in the department.

Service award nominations sought

The School of Medicine is seeking nominations for this year's Dean's Distinguished Service Award, the highest honor awarded to a medical staff member.

The award, which includes a $1,000 prize, recognizes a full-time medical school employee with at least three years of continuous service, who shows commitment to exceeding his or her job responsibilities, creates a positive working and learning environment and improves the community.

The school is also seeking nominations for the research support and operations staff awards. Those awards honor employees who perform duties that exceed job expectations, have outstanding leadership and superior quality service. Each of those recipients will receive $500.

All winners will be recognized at an awards ceremony June 9.

For more information, go online to *aladdin.wustl.edu/jobs.nsf.* All nominations are due March 31.

University Events

PAD to present Shakespeare's *Much Ado About Nothing*

The 'merry war' is updated to 1920s Italy for Edison production

BY LIAM OTTEN

Rapier wit and cutting observation; lies, laughter and love, with a stiff dose of betrayal. Such is the emotional arsenal deployed for *Much Ado About Nothing*, William Shakespeare's strategic guide to the "merry war" between the sexes.

This month, the Performing Arts Department in Arts & Sciences will present *Much Ado* as its spring mainstage production.

Performances in Edison Theatre will begin at 8 p.m. Feb. 24-25, at 2 p.m. Feb. 26, at 8 p.m. March 3-4 and at 2 p.m. March 5.

Written about 1598, *Much Ado* is one of Shakespeare's later comedies, though its flirtations with disaster and complicated morality — good characters who act badly — prefigure the tragic-comic sensibility of subsequent "problem plays" such as *Measure for Measure* and *All's Well That Ends Well.*

"Like all Shakespearean comedy, *Much Ado* deals with love and marriage," said director Henry I. Schvey, Ph.D., professor and PAD chair. "But it's also about misunderstanding, misinterpretation and disguise. The entire play is about the ways we mask our identity and hide our true feelings, literally and figuratively."

The plot of *Much Ado* centers on Claudio, a young nobleman in the army of Don Pedro, who falls in love with Hero, daughter of Leonato, the local governor. Don Pedro, learning of Claudio's feelings, offers to woo Hero on his lieutenant's behalf but Don John, Don Pedro's misanthropic half-brother, determines to wreck the union by deceiving Claudio about Hero's fidelity.

For many audiences, the story of Claudio and Hero is "upstaged" by the parallel romance of Beatrice, Hero's cousin, and Benedick, Claudio's comrade. Trading clever barbs and courtly wordplay, this worldly couple transforms the denial of love — Beatrice, for example, vows to never marry — into a paradoxical form of courtship.

"In some ways, Claudio and Hero represent Shakespeare's notion of traditional love," Schvey said. "Beatrice and Benedick are more experimental and progressive. They live in a world of banter, yet their battles of wit mine the question of women's rights and even the possibility of a true equality between the sexes.

"The play seems to leap out of its own century and land directly into ours."

Conversely, "I think Shakespeare also investigates the insufficiency of clever wordplay," Schvey added. "The audience knows that Beatrice and Benedick are destined for one another, but the characters themselves must be fooled into acknowledging what has been in their hearts all along."

DAVID KILPER

Laura Harrison and Justin Joseph as Beatrice and Benedick in *Much Ado About Nothing*, being staged by the Performing Arts Department in Arts & Sciences Feb. 24-26 and March 3-5 in Edison Theatre. Henry I. Schvey, Ph.D., directs the cast of 21.

Schvey previously directed *Much Ado* for the Leiden English Speaking Theatre, the company he founded in the Netherlands in 1975 and led until coming to St. Louis in 1987. For this production, he has kept the original Italian setting but updated the time period to the early 1920s.

"So often, when an audience sees Shakespeare done in 16th-century style, they hold it at a remove," Schvey said. "My hope is that relocating the story to a more modern period will enable audiences to see the connections to our own time while still truly appreciating the revolutionary nature of Beatrice's rebellion."

The cast of 21 is led by Laura Harrison and Justin Joseph as Beatrice and Benedick, and by Rob Klemisch and Barrie Golden as Claudio and Hero.

Also starring are Matt Goldman as Don Pedro; Ian Pearson as Leonato; Andrew Byrd as Don John; and Rob McLemore as the watchman Dogberry.

Sets are by Marie Anne Chiment, visiting artist-in-residence. Costumes are by Bonnie Kruger, senior lecturer. Original music is by William Lenihan, lecturer in music in Arts & Sciences.

Choreography is by Christine Knoblauch-O'Neal, senior lecturer and director of the Ballet Program. Dramaturg is Joy Ryan, a master's degree candidate in drama.

Tickets are $15 — $9 for students, senior citizens and WUSTL faculty and staff — and are available through the Edison Theatre Box Office, 935-6543, and all MetroTix outlets. For more information, call 935-6543.

Garber to explore Shakespeare's impact on modern culture

BY NADEE GUNASENA

Shakespearean scholar and cultural critic Marjorie Garber will present the Helen Clanton Morrin Lecture at 4 p.m. Feb. 23 in Edison Theatre. Her talk, "Bartlett's Familiar Shakespeare: The Pleasures and Pitfalls of Quotations," will focus on the great bard's influence on modern life.

Garber's visit will coincide with the University's annual Shakespeare production. This year's play is *Much Ado About Nothing*, directed by Henry I. Schvey, Ph.D., professor and chair of the Performing Arts Department in Arts & Sciences.

Shakespeare is a familiar acquaintance for Garber; she has authored four books devoted to his body of work.

Her most recent book, *Shakespeare After All*, is an ambitious study that makes Shakespeare more accessible to the common reader. This comprehensive critical guide to all 38 plays was chosen by *Newsweek* as one of the 10 best nonfiction books of 2004 and received the 2005 Christian Gauss Book Award from Phi Beta Kappa.

Garber uses themes from across the spectrum of cultural studies, such as gender studies, post-colonial theory, and Elizabethan stage history, to help her readers connect with Shakespeare's plays.

Garber

She writes, "What is often described as the timelessness of Shakespeare, the transcendent qualities for which his plays have been praised around the world and across the centuries, is perhaps better understood as an uncanny timeliness, a capacity to speak directly to circumstances the playwright could not have anticipated or foreseen."

Garber is known for her eclectic approach to modern cultural topics. She has written 12 books, many of which focus on cultural theory and cover such diverse topics as *Vice Versa: Bisexuality and the Eroticism of Everyday Life*, *Sex and Real Estate: Why We Love Houses* and *Dog Love*. Her methods are unorthodox, jumping from one idea to another, liberally using pun and wordplay in her cultural analyses.

Garber serves in a number of professional capacities at Harvard University. She is the William R. Kenan Jr. Professor of English and American Literature and Language and of Visual and Environmental Studies. She also chairs the Department of Visual and Environmental Studies and directs the Carpenter Center for the Visual Arts.

In addition to the Assembly Series, Garber's lecture is sponsored by the PAD, The Center for the Humanities, the Comparative Literature Program and the Interdisciplinary Project in the Humanities, all in Arts & Sciences.

The talk is free and open to the public. For more information, call 935-4620 or go online to *assemblyseries.wustl.edu*.

Black Artists' Group • Ash Wednesday • Workstation Ergonomics

"University Events" lists a portion of the activities taking place Feb. 17-March 2 at Washington University. Visit the Web for expanded calendars for the Hilltop Campus (calendar.wustl.edu) *and the School of Medicine* (medschool.wustl.edu/calendars.html).

Exhibits

BAG — Black Artists' Group. In celebration of Black History Month. Through March 5. Olin Library Lobby. 935-6626.

Celebrating 100 Years of Federal Information. Through March 31. Olin Library, Grand Staircase Lobby and Ginkgo Reading Rm. 935-6569.

***Shakespeare's* Much Ado about Nothing.** Through March 6. Olin Library Lobby. 935-5406.

Film

Friday, Feb. 17

3-5 p.m. Nuremberg on Film: Contemporary and Contemporaneous Perspectives. *Nuremberg: U.S. Army Documentary* (1949) and *The Nuremberg Trials: USSR Documentary* (1949). Sponsored by the School of Law. Anheuser-Busch Hall, Rm. 202. 935-7988.

Friday, Feb. 24

3-6 p.m. Nuremberg on Film: Contemporary and Contemporaneous Perspectives. *Nuremberg* (2000). Anheuser-Busch Hall, Rm. 204. 935-7988.

Wednesday, March 1

7 p.m. Japanese Film Series. *Nobody Knows* (2004). Hirokazu Koreeda, dir. Busch Hall, Rm. 100. 935-5110.

Lectures

Friday, Feb. 17

9:15 a.m. Pediatric Grand Rounds. "Diagnosis and Treatment of Farconi's Anemia." Marcus Grompe, prof. of medical & molecular genetics, Ore. Health & Science U. Clopton Aud., 4950 Children's Place. 454-6006.

Noon. Cell Biology & Physiology Seminar. "Apoptotic Checkpoints at the Mitochondrion." Emily Cheng, asst. prof. of internal medicine. Co-sponsored by molecular biology & pharmacology. McDonnell Medical Sciences Bldg., Rm. 426. 362-7437.

12:30-4:30 p.m. St. Louis STD/HIV Prevention Training Center. "Laboratory Methods." (Continues 12:30-4:30 p.m. Feb. 17.) Cost: $75. For location and to register: 747-1522.

7:30 p.m. Saint Louis Astronomical Society Meeting. "Prepare for Liftoff — The Challenger Learning Center, St. Louis." Tasmyn Scarl Front, dir., Challenger Learning Center, St. Louis. McDonnell Hall, Rm. 162. 935-4614.

Monday, Feb. 20

Noon. Molecular Biology & Pharmacology Seminar. "Cracking the Secret of Youth: From Early Embryos to Embryonic Stem Cells." Qun Tian Wang, research assoc., Dept. of Biochemistry, Stanford U. South Bldg., Rm. 3907, Philip Needleman Library. 747-3339.

Noon. School of Law "Access to Justice" Public Interest Law Speakers Series. "Lawyers and Labor: The Role of Law in Organizing Low-wage Workers." Jennifer Gordon, assoc. prof. of law, Fordham U. Anheuser-Busch Hall. 935-6419.

4 p.m. Eighteenth-century Interdisciplinary Salon Lecture. "Exotic Abortifacients: Gender Politics in the Eighteenth-century Atlantic World." Londa Schiebinger, John L. Hinds Professor of History of Science, Stanford U. Co-sponsored by the depts. of History and Romance Languages and by Women and Gender Studies. Women's Bldg. Formal Lounge. 935-5175.

4 p.m. Immunology Research Seminar Series. "Proteases: Specific Regulators of Immunity." Christine T. N. Pham, asst. prof. of internal medicine. Moore Aud., 660 S. Euclid Ave. 362-2763.

5:30 p.m. Cardiac Bioelectricity and Arrhythmia Center Seminar. "Molecular Imaging and Targeted Therapeutics: Prospects for High Payload Drug Delivery With Novel Pharmacokinetic/Pharmacodynamic Profiles." Samuel A. Wickline, prof. of medicine. (5 p.m. refreshments.) Whitaker Hall, Rm. 218. 935-7887.

Tuesday, Feb. 21

Noon. Molecular Microbiology & Microbial Pathogenesis Seminar Series. "Sphingolipid-mediated Fungal Pathogenesis." Maurizio Del Poeta, assoc. prof. of biochemistry & molecular biology, U. of S.C. Cori Aud., 4565 McKinley Ave. 747-5597.

Noon. Program in Physical Therapy Research Seminar. "Skeletal Response to Fatigue Loading." Matthew Silva, assoc. prof. of orthopaedic surgery and of biomedical engineering. 4444 Forest Park Blvd., Lower Lvl., Rm. B112. 286-1404.

Wednesday, Feb. 22

11 a.m. Assembly Series. ArtSci Council Lecture. "The Hearts of Children and Obligations of Our Nation's Schools." Jonathan Kozol, author. Graham Chapel. 935-4620.

11 a.m. School of Law "Access to Justice" Public Interest Law Speaker Series. "Lawyers and Labor: The Role of Law in Organizing Low-wage Workers." Jennifer Gordon, assoc. prof. of law, Fordham U. Anheuser-Busch Hall. 935-6419.

Noon. Work, Families, and Public Policy Brown Bag Seminar Series. "The Timing of Childbearing Among Heterogeneous Women in Dynamic General Equilibrium." Ping Wang, Seigle Family Professor in Arts & Sciences and chair of the Department of Economics. Eliot Hall, Rm. 300. 935-4918.

3 p.m. Harris Institute for Global Legal Education. "The New Development of Chinese Antitrust Legislation." Xiaoye Wang, head of the Expert-Group for WTO Trade and Competition Policy, Commercial Ministry of China. Anheuser-Busch Hall, Rm. 309. 935-7988.

4 p.m. Center for New Institutional Social Sciences Speaker Series. Jenna Bednar, asst. prof. of political science, U. of Calif.-San Diego. Eliot Hall, Rm. 300. 935-5068.

4 p.m. Physics Colloquium. "Building a Quantitative Understanding of Gene Regulation at the Systems Level." Chen-Shan Chin, Dept. of Biochemistry & Biophysics, U. of Calif., San Francisco. (3:30 p.m. coffee, Compton Hall, Rm. 245.) Crow Hall, Rm. 204. 935-6276.

5 p.m. Surgery CME Lecture. Eugene M. Bricker Visiting Lecture in Surgery. "Lessons in Surgical Leadership." Layton F. Rikkers, prof. and chair of surgery, U. of Wisc. Eric P. Newman Education Center. 362-6891.

7 p.m. Chabad on Campus Mysticism Lecture Series. Simon Hall, Rm. 105. 721-2884.

7 p.m. Jewish, Islamic and Near Eastern Studies Lecture. Adam Cherrick Lecture in Jewish Studies. "Must a Jew Believe Anything?" Menachem Kellner, prof. of Jewish thought, U. of Haifa, Israel. (Kosher reception follows.) Women's Bldg. Formal Lounge. 935-8567.

Thursday, Feb. 23

7:30 a.m.-4:45 p.m. Surgery CME Course. "Annual Refresher Course & Update in General Surgery." (Continues 7:30 a.m.-9:30 p.m. Feb. 24 and 7:30-11:30 a.m. Feb. 25.) Cost: $475 for physicians, $375 for physician in training/allied health professionals, with additional course options. The Ritz-Carlton, 100 Carondelet Plaza. For more information and to register: 362-6891.

8 a.m. Medicine Grand Rounds. "Inflammation, Atrophy, Gastric Cancer: Connecting the Molecular Dots." Juanita Merchant, prof. of internal medicine and of molecular & integrative physiology, U. of Mich. Clopton Aud,. 4950 Children's Place. 362-2031.

12:10-12:50 p.m. Wellness Connection Brown Bag Lunch. "Computer Workstation Ergonomics." Paul Landgraf, Dept. of Environmental Health & Safety. West Campus Multipurpose Rm. 935-5990.

4 p.m. Assembly Series. Helen Clanton Morrin Lecture. "Bartlett's Familiar Shakespeare: The Pleasures and Pitfalls of Quotations." Marjorie Garber, author, prof. of English and dir. of the Humanities Center, Harvard U. Edison Theatre. 935-4620.

4 p.m. Chemistry Seminar. "Acidophile Enzymes Pass the Acid Test." T. Joseph Kappock, asst. prof. of chemistry. McMillen Lab., Rm. 311. 935-6530.

4 p.m. History Colloquium. "Disciplining Interdisciplinarity: Psychology and Ideology in the Case of Andrew Marvell." Derek Hirst, William Eliot Smith Professor of History, and Steven Zwicker, Stanley Elkin Professor in the Humanities. Duncker Hall, Rm. 201, Hurst Lounge. 935-5450.

4 p.m. Ophthalmology & Visual Sciences Seminars. "Light at the End of the Tunnel: Organelle Degradation in the Developing Lens." Steve Bassnett, assoc. prof. of ophthalmology & visual sciences.

Sports

Men's hoops scores 100 in back-to-back wins

The men's basketball team (15-7, 7-4 UAA) won two key league home games to move into a second-place tie in the University Athletic Association standings.

The Bears defeated Case Western Reserve University, 111-74, on Feb. 10 at the Field House. Sophomore Danny O'Boyle finished with a career-high 22 points on 7-of-9 shooting. Senior Scott Stone added 20 points and eight assists, while sophomore Troy Ruths netted 19 points and grabbed eight rebounds.

On Feb. 12, Washington U. rallied for a 102-100 double overtime win over Emory University on Senior Day. The Bears, who hit a school- and UAA-record 46 free throws (59 attempts), rallied late in regulation to force overtime.

In the second overtime, Stone gave the Bears a brief 97-95 lead, but WUSTL trailed, 100-99, with 35.6 seconds left. But then freshman Tyler Nading stole the ball and drove in for the go-ahead layup with 28 seconds remaining in double overtime.

Nading finished with a career-high 22 points and eight rebounds. Ruths and senior Mike Grunst finished with 13 points apiece before fouling out in regulation. O'Boyle added 19 points on 4-of-8 shooting from 3-point range.

Women's hoops team wins two league games

The No. 3 women's basketball team (20-2, 10-1 UAA) picked up two UAA home wins to remain in first place in the conference race.

The Bears defeated Case Western Reserve, 64-46, Feb. 10 at the Field House. Senior Danielle Beehler led WUSTL with 14 points and eight rebounds, while freshman Shanna-Lei Dacanay and senior Kelly Manning added 13 points apiece. Manning also became the fourth player in program history to score at least 1,400 points in the game.

On Feb. 12, Washington U. defeated Emory, 73-51, behind Manning's 14 points on 5-of-8 shooting. The Red and Green ended the first half on a 37-7 run to take a commanding 43-13 halftime lead.

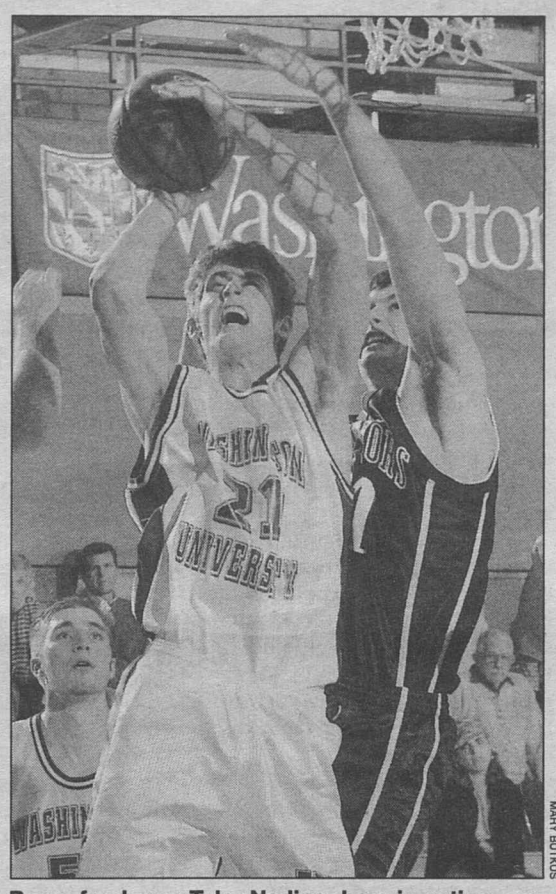
Both swim, dive teams take third at UAA meet

The men's and women's swimming and diving teams each placed third at the UAA Championships Feb. 9-11 in Atlanta.

Senior Michael Slavik led the men, totaling four individual titles. He won the 100- and 200-yard freestyles and helped the 200-free relay and 400-free relay squads to first place. Classmate Eric Triebe also added a win in the 50 free.

On the women's side, sophomore Meredith Nordbrock won the 200 IM and helped the 200-medley relay take first. Senior Jenny Scott placed second in the 500-freestyle and third in the 100 freestyle. Moreover, sophomore Priya Srikanth took third in the three-meter diving competition. She totaled 461.55 points to clear the NCAA qualifying standard of 410 points.

In all, the Bears combined to win total seven individual conference titles.



MARY BUTKUS

Bears freshman Tyler Nading, here in action earlier this year, came up with a clutch play in the final half-minute of double overtime to clinch a 102-100 win for the Bears over Emory University Feb. 12.

Women runners claim first at Illinois College

The indoor track and field teams competed at the Iowa State Classic on Saturday in Ames, Iowa, as well at the Illinois College Blue Classic in Jacksonville, Ill. Though no team scores were kept in Iowa, the WUSTL women took first place in the 10-team field in Jacksonville, Ill., and the Bears men placed third.

Junior Natalie Badowski won the 400-meter dash, while senior Laura Ehret took home the 800 title. Freshman Lyuda Shemyakina took second in the 800; and sophomore Morgen Leonard-Fleckman and junior Delaina Martin won the pole vault and weight throw, respectively.

Seniors David Skiba, Drew Martin and Karl Zelik took home first-place trophies for the WUSTL men. Skiba won the 55-meter hurdles, Martin won the shot put, and Zelik won the triple jump.

The Bears sent just two representatives to the Iowa State Classic. Senior Brennan Bonner turned in a strong performance in the 5,000-meter run. He provisionally qualified for the NCAA Championships, clocking a time of 14:51.61. Junior Beth Herndon finished the 5K race in 18:37.43, a team season-best time.

Poet Gregerson to read for Writing Program Reading Series

Poet Linda Gregerson, the visiting Fannie Hurst Professor of Creative Literature in the Writing Program in Arts & Sciences, will read from her work at 8 p.m. Feb. 23.

In addition, Gregerson will speak on "The Social Life of Poems" at 8 p.m. March 2.

Both talks — part of The Writing Program's spring Reading Series — are free and open to the public and will take place in Hurst Lounge, Duncker Hall, Room 201.

Gregerson is the author of three collections of poetry: *Fire in the Conservatory* (1982); *The Woman Who Died in Her Sleep* (1996), a finalist for the Lenore Marshall Prize and The Poets Prize; and *Waterborne* (2002), winner of the 2003 Kingsley Tufts Poetry Award.

Recent poems have appeared or are forthcoming in *Triquarterly*, *Poetry*, *The Atlantic Monthly* and *The Kenyon Review*.

Gregerson has also written two volumes of criticism: *The Reformation of the Subject: Spenser, Milton and the English Protestant Epic* (1995) and *Negative Capability: Contemporary American Poetry* (2001).

Her numerous honors include awards from the American Academy of Arts and Letters, the Poetry Society of America and the Modern Poetry Association, as well as fellowships from the Guggenheim Foundation, the Institute for Advanced Study, the National Humanities Center and the National Endowment for the Arts.

Gregerson is the Frederick G.L. Huetwell Professor of English Language and Literature at the University of Michigan, where she teaches creative writing and Renaissance literature.

For more information, call 935-7130.

Washington University Symphony Orchestra in concert Feb. 19

The Washington University Symphony Orchestra will perform music of Ernest Bloch, Peter I. Tchaikovsky and Gay Holmes Spears at 3 p.m. Feb. 19 in Graham Chapel.

Dan Presgrave, instrumental music coordinator for the Department of Music in Arts & Sciences, conducts the 70-plus-member orchestra.

The program will open with Tchaikovsky's colorful *Capriccio Italien* and also features the *Concerto Grosso No. 1* by the Swiss-American Bloch (1880-1959).

The latter work, written in 1925, mixes the modern piano and the concerto grosso, a genre typically employed for string orchestra and popular in the Baroque era. This compelling, anachronistic instrumentation was one reason the piece was frequently performed throughout the middle part of the 20th century.

Pianist for the concerto grosso is Mark Tollefsen, a junior in Arts & Sciences studying piano with Seth Carlin, professor of music.

Tollefsen was soloist with the orchestra as a sophomore and also has appeared as soloist with the Saint Louis Symphony Orchestra.

He was a finalist in the Stravinsky International Piano Competition and placed third in the Music Teacher's National Association, Midwest Regional Competition.

The St. Louis resident is the son of Douglas M. Tollefsen, M.D., Ph.D., assistant professor of biochemistry and molecular biophysics in the School of Medicine.

Also on the program is *Where the Rivers Run* by St. Louis composer Spears, who has taught at Webster University and other area colleges and has written commissions for several area churches.

The performance is free and open to the public and is sponsored by the Department of Music.

For more information, call 935-4841 or email staylor@wustl.edu.

Maternity Bldg., Rm. 725. 362-1006.

4:15 p.m. Earth & Planetary Sciences Colloquium. "Non-chondritic Magnesium and the Origins of the Terrestrial Planets." Uwe Wiechert, Wissenschaftlicher Mitarbeiter, Inst. for Geological Sciences, Freie University Berlin. Earth & Planetary Sciences Bldg., Rm. 203. 935-5610.

Friday, Feb. 24

9:15 a.m. Pediatric Grand Rounds. Annual Ben Abelson Memorial Lecture. "Comparative Proteomics — Diagnostics and Prognostics for the 21st Century." Harvey Cohen, prof. and chair of pediatrics, Stanford U. Clopton Aud., 4950 Children's Place. 454-6006.

Noon. Cell Biology & Physiology Seminar. "Accessory Proteins of the NA K-ATPase." Robert W. Mercer, prof. of cell biology & physiology. Co-sponsored by molecular biology & pharmacology. McDonnell Medical Sciences Bldg., Rm. 426. 362-7437.

Noon. GI Research Conference. "Sonic Hedgehog Processing by Pepsin Prevents Gastric Atrophy." Juanita Merchant, prof. of internal medicine and of molecular & integrative physiology, U. of Mich. Clopton Aud., Clinical Sciences Research Bldg., Rm. 901. 362-2031.

12:30-4:30 p.m. St. Louis STD/HIV Prevention Training Center. "STD Clinician." (Also 12:30-4:30 p.m. March 3, 10, 17, 24 & 31.) Cost: $125. For location and to register: 747-1522.

7 p.m. Chabad on Campus Shabbat Dinner Faculty Guest Series. "Reflections on Our Trip to Israel." Chancellor Mark S. Wrighton. 7240 Forsyth Blvd. 721-2884.

Saturday, Feb. 25

7:30 a.m.-12:40 p.m. Cardiovascular Disease CME Course. "8th Annual Update in Cardiovascular Diseases and Hypertension." Cost: $75. Eric P. Newman Education Center. To register: 362-6891.

Monday, Feb. 27

8:30 a.m.-4 p.m. Center for the Application of Information Technology Two-day Workshop. "EI for IT: Using Emotional Intelligence in Information Technology." (Continues 8:30 a.m.-4 p.m. Feb. 28.) Cost: $1,000, reduced fees available for CAIT member organizations. CAIT, 5 N. Jackson Ave. To register: 935-4444.

4 p.m. Condensed Matter/Materials & Biological Physics Seminar. "Advanced Metal Hydrides: Solution to the Storage Dilemma for Hydrogen Energy?" Robert C. Bowman Jr., NASA Jet Propulsion Lab, Calif. Inst. of Technology. (3:45 p.m. coffee.) Compton Hall, Rm. 241. 935-6276.

4 p.m. Immunology Research Seminar Series. "Integrating T Cell Signals: Lessons From Human Genetic Disorders." Pamela Schwartzberg, National Human Genome Research Inst., National Institutes of Health, Bethesda, Md. Moore Aud., 660 S. Euclid Ave. 362-2763.

5 p.m. Cardiac Bioelectricity and Arrhythmia Center Seminar. "Calcium Regulation in Cardiac Myocytes: Systolic Dysfunction and Arrhythmogenesis in Heart Failure." Donald Bers, chairman of physiology and prof. of cellular & molecular physiology, Loyola U., Chicago. 935-7887.

7 p.m. Sam Fox School Architecture Lecture Series. Antoine Picon, prof. & dir. of doctoral programs, Harvard U. Graduate School of Design. Steinberg Hall Aud., 935-9347.

Tuesday, Feb. 28

Noon. Molecular Microbiology & Microbial Pathogenesis Seminar Series. "Genomic Analysis of Natural Variation in Saccharomyces." Barak Cohen, asst. prof. of genetics. Cori Aud., 4565 McKinley Ave. 362-3692.

Noon. Law School Jewish Lunch and Learn. "Examining Secular Issues and Jewish Law." Rabbi Hershey Novack, Chabad on Campus. Anheuser-Busch Hall, Rm. 307. 721-2884.

Wednesday, March 1

11 a.m. Assembly Series Lecture. College Democrats Lecture. "The Future of the Democratic Party." A panel discussion moderated by Michael Minta, asst. prof. of political science. Graham Chapel. 935-4620.

11 a.m. School of Law "Access to Justice" Public Interest Law Speakers Series. "The Paradoxical Structure of Constitutional Litigation." Pamela Karlan, Kenneth and Harle Montgomery Professor of Public Interest Law, Stanford U. Anheuser-Busch Hall. 935-6419.

Thursday, March 2

Noon. Center for Health Policy Brown Bag Seminar Series. "Making a Difference in Racial and Ethnic Disparities in Rural and Urban Missouri." Kristofer Hagglund, co-dir., Center for Health Policy, U. of Mo. Simon Hall, Rm. 241. 935-9108.

4 p.m. Center for the Humanities Faculty Fellows Lecture & Workshop Series. "Objects for the Table: La Bruyère, Descartes and Dutch Golden Age Painters." Harriet Stone, prof. of French. McDonnell Hall, Rm. 162. 935-5576.

4 p.m. History Colloquium. "Sacred Performances: On African-American Religion and Cultural Production." Judith Weisenfeld, assoc. prof. of religion, Vassar College. Duncker Hall, Rm. 201, Hurst Lounge. 935-5450.

Music

Sunday, Feb. 19

3 p.m. Concert. Concert Choir of Washington University and the Saint Louis Chamber Chorus. Cost: $18, $16 for students and seniors. Cathedral-Basilica of Saint Louis. (636) 458-4343.

On stage

Friday, Feb. 24

8 p.m. Performing Arts Dept. Presentation. *Much Ado About Nothing* by William Shakespeare. Henry I. Schvey, dir. (Also 8 p.m. Feb. 25, March 3 & 4; 2 p.m. Feb. 26 & March 5.) Cost: $15, $9 for students, children, seniors & WUSTL faculty & staff. Edison Theatre. 935-6543.

Sports

Saturday, Feb. 25

Noon. Baseball vs. Fontbonne U. Kelly Field. 935-4705.

Tuesday, Feb. 28

12:30 p.m. Baseball vs. Fontbonne U. Kelly Field. 935-4705.

Thursday, March 2

1 p.m. Baseball vs. Webster U. Kelly Field. 935-4705.

Worship

Wednesday, March 1

7:30 a.m. Catholic Ash Wednesday Service. St. Louis College of Pharmacy, Carlysle Student Center. 935-9191.

12:15 p.m. Catholic Ash Wednesday Service. Umrath Hall Lounge. 935-9191.

5:15 p.m. Catholic Ash Wednesday Service. Fontbonne U., Ryan Hall. 935-9191.

And more...

Friday, Feb. 17

10 a.m. Center for the Humanities Faculty Fellows' Lecture & Workshop Series. Workshop: "German Studies/Jewish Cultural Studies/Diaspora Studies: The 'Place' of Germany." Leslie Morris, assoc. prof. of German and director of the Center for Jewish Studies, U. of Minn. Lab Sciences Bldg., Rm. 201. 935-5576.

Saturday, Feb. 18

6:30 p.m. Central Institute for the Deaf Trivia Night. Proceeds benefit students in the CID school. Cost: $250 per table of 10. Central Inst. for the Deaf, gymnasium, 4560 Clayton Ave. To register: 977-0133.

Monday, Feb. 20

11:30 a.m.-4:30 p.m. Blood Drive. Co-sponsored by North Side Association and Sigma Alpha Epsilon Fraternity. (Also 11:30 a.m.-4:30 p.m. Feb. 21, Mallinckrodt Student Center, Lower Lvl., The Gargoyle; 5-10 p.m. Feb. 22 & 23, Wohl Student Center, Friedman Lounge, and Village House Dining Rm. D.) Mallinckrodt Student Center, Lower Lvl., The Gargoyle. 935-5066.

Tuesday, Feb. 21

4-7 p.m. Health & Wellness Center Open House. Open to students, faculty & staff. Student Health Services Health & Wellness Center, Forsyth House. R.S.V.P. to mruwitch@wustl.edu.

7 p.m. Catholic Student Center Discussion. "Stem Cell Research: The Tip of the Ethical Iceberg." Sr. Jean deBlois. Catholic Student Center. 6352 Forsyth Blvd. 935-9191.

Tuesday, Feb. 28

3 p.m. Visiting East Asian Professionals Program Film Screening & Panel Discussion. "30 Years of Sisterhood: Women in the 1970s Women's Liberation Movement in Japan." (Reception follows). Crow Hall, Rm. 201. 935-8772.

DAVID KILPER

New living spaces Construction of a new residence hall on the South 40 continues, aided in part by a mild winter. This is Phase 4B of the plan, in which both Koenig and Liggett houses were scheduled to be replaced. As soon as this building is complete, Liggett will follow in the footsteps of Koenig and come down. The new Koenig House opened for students last semester. The residential college will be named as soon as the new building is complete.

Clocks

– from Page 1

Taghert's lab identifies the clock cells in fruit fly brains and traces their connections to other cells and tissues in hopes of better understanding how they affect characteristics such as the morning and evening activity peaks normally seen in fruit flies.

"We look at where the branches of these cells go, what signals they release and when they release them, and who is listening," Taghert said. "We want to follow the chains of cells that respond to signals from the clock cells. We're hoping that path doesn't get too complicated too fast."

Working with the short-lived fruit fly, a classic model for circadian biology, allows manipulation of genes with potential circadian links and rapid assessment of the resulting effects on new generations of flies. Such manipulations helped scientists identify "Period," the first gene associated with circadian rhythms.

Humans have three genes analogous to Period, one of which is mutated in a critical region in patients with advanced phase sleep syndrome.

Beat the clock

PDF is a neuropeptide that originally was identified in crabs and shrimp, where it disperses pigment in light-sensing organs at the beginning of the day, adjusting the organs for the increased light levels that begin at sunrise.

In the fruit fly brain, PDF is made by 16 of the 150 brain neurons that Taghert and others have so far identified as clock cells. Taghert's group showed in an earlier study that loss of PDF altered the rhythmic behaviors of flies, changing their behavior schedule to one more appropriate for about a 22-hour day.

In follow-up studies, Taghert and other scientists linked PDF to the synchronization of various kinds of clock cells.

For this study, researchers in Taghert's lab used the fruit fly genome as a guide to allow them to identify all the fruit fly peptide receptor genes, express them in cell cultures, expose them to PDF and search for receptors that are specifically activated by PDF.

When they found one that interacted with PDF, they produced a line of fruit flies with a mutation in the gene for that receptor protein. The new line of flies acted like the flies in which PDF had been knocked out, demonstrating that the receptor is essential to normal PDF function.

Close relative in humans

Mammals do not have a gene directly equivalent to PDF. But

> **"We found the fruit fly PDF receptor responded both to calcitonin, which we hadn't previously linked to circadian function, and to PACAP, a mammalian neuropeptide already recognized as a part of the circadian system."**
>
> PAUL TAGHERT

the Taghert group's new findings indicate that the PDF receptor is closely related to mammalian receptors for the proteins calcitonin and CGRP (calcitonin gene-related product), a well-known molecule whose precise function has been difficult to determine, which may play a similar role in mammalian circadian systems.

"We found the fruit fly PDF receptor responded both to calcitonin, which we hadn't previously linked to circadian function, and to PACAP, a mammalian neuropeptide already recognized as a part of the circadian system," Taghert said. "This suggests that the receptor systems probably evolved from a common ancestor and that what we learn from the fruit fly may be helpful in understanding circadian biology in higher organisms."

Taghert's group is working to identify the locations and characteristics of fruit fly brain cells that make the PDF receptor and to trace the signals emitted by those cells back into the circadian system.

Pathfinder

Students have also traveled to Hawaii

– from Page 1

interest in the environment. In recent years the program has produced two Rhodes Scholars, a Fulbright Scholar, a Truman Scholar and a Hertz Scholar.

Arvidson helps recruit about 15 freshmen per year to the University to participate in the program. These students major in many disciplines and also work in the Pathfinder Program.

As part of the program, they conduct environmental fieldwork and examine research topics from environmental sustainability perspectives.

The Pathfinder Capstone Experience is designed to promote coordinated measurements in the field, followed by detailed analyses in the laboratory on topics that cut across the many disciplines and courses the students have encountered over their four years.

In Rio Tinto students researched the chemistry, mineralogy and biota of the unusual sulfate minerals deposited along the river. They also explored land-management practices associated with the region and its mines.

In recent years, Arvidson has accompanied Pathfinder students to the top of Mauna Kea, Hawaii, to study hydrothermal alteration of cinder cones and the hydrology of Lake Waiau. They have also examined active steam vents in Kilauea, Hawaii, and helped The Nature Conservancy map invader species in Molokai, Hawaii.

"We deployed stereographic imaging systems, a topographic profiler, a reflectance spectrometer and an emission spectrometer," Arvidson said of the Rio Tinto experiments.

"We characterized the topography, mineralogy, and water chemistry for the mapped portion of the river and its banks and are currently working with NASA and Spanish scientists to understand how the systems evolve over time, including how microbial systems are able to thrive in this very acidic system.

"This is also of interest to us because the minerals we see at Rio Tinto also formed on Mars billions of years ago, based on the ancient shallow lake environment discovered from the *Opportunity* Mars rover measurements on the plains of Meridiani."

Arvidson is the deputy principal investigator for the Mars Exploration Rover Mission. A new crew of Pathfinder students will deploy to Rio Tinto early next semester, with the addition of faculty members from Harvard and Brown universities.

The Pathfinder students who worked at Rio Tinto are Steven M. Chemtob, Colleen E. Donovan, Gillian M. Fairchild, Lonia R. Friedlander, Natalie M. Karas, Matthew N. Klassen, Michael P. Mendenhall, Erin N. Robinson, Sarah E. Steinhardt and Lindsay R. Weber.

Chemtob is a double-major in earth and planetary sciences and environmental studies with a minor in economics, all in Arts & Sciences, from Silver Spring, Md. At Rio Tinto, he was part of the team operating a portable visible/near infrared spectrometer.

According to Chemtob, in a three-person team, one person would wear the 40-pound spectrometer, one person would hold the optic cable, and one person would record in a notebook. This spectrometer collects reflectance spectra in the wavelength range of 0.4-2.5 micrometers, which can give important information about mineralogy, structure and the presence of water.

"We collected spectra of end-member minerals — that is, each mineral present without any mixing — then, took spectra along traverses across our field site," Chemtob said. "We collected over 300 spectra during the week, which we have since been interpreting to understand the mineralogy and geochemical setting of the field site.

"In addition to operating the spectrometer, I collected a number of solid and liquid samples to bring back to Washington University."

Chemtob's senior thesis is based on the analyses of these samples.

"By characterizing the samples I brought home from Rio Tinto, I hope to gain a better understanding of the geochemical environment," Chemtob said. "In addition, by understanding the formation of sulfates on Earth, we can attempt to understand the environment of formation of recently discovered sulfate deposits on Mars."

Meteorite

Usually have a glassy coating from its descent

– from Page 1

early years, last year alone he received 900 meteorite queries.

"I felt obliged to answer people's questions and in the process of doing so, found that I was saying the same thing over and over again," Korotev explained. "Now, I like to build Web sites and I like photography, so I came up with the idea of a Web site that could explain both verbally and visually that 'your sample is not a meteorite because … .'

"There are scores of reasons."

"A Photo Gallery of Meteorwrongs" (*epsc.wustl.edu/admin/resources/meteorites/meteorwrongs/meteorwrongs*) showcases more than 100 objects misidentified as meteorites. Each photo has a caption that explains why the rock is probably not a meteorite and suggests what it most likely is.

The site provides criteria for recognizing space objects. For instance, freshly fallen meteorites will have a fusion crust, a glassy coating that forms on the object during descent. And meteorites are usually not angular, because protuberances tend to be ablated away as the object comes through the atmosphere.

Korotev said there is a growing body of meteorite collectors who, like stamp or baseball card collectors, are seeking samples of every known lunar or Martian meteorite documented — that's only 35-40 lunar meteorites. Also, people seek meteorite samples for novelties.

"I've had two young men tell me they want some grams of a lunar meteorite for their fiancée's engagement ring," he said. "My reaction is: 'Lunar meteorites are not that attractive; get her a diamond.'

"Besides, meteorites were formed at a place that doesn't have water, which means that they're unstable in water. And that's not the sort of thing you want to put in a ring if your fiancée ever wants to wash her hands."

Korotev said lunar rocks are depleted in volatile elements, and compared with Earth rocks they are low in sodium, potassium and rubidium, though high in chromium. There are about 12 different chemical signatures that indicate a lunar source.

Martian meteorites share some of the same features as lunar ones, except that Martian meteorites are never rich in feldspar, like most lunar meteorites.

Often, Korotev and his colleagues can do simple, quick tests to determine if a rock has meteorite potential. If a rock has layers, forget it — to have layers, gravity is needed. If the rock has low density, it can't be a meteorite, and they can determine this with a quick lab test.

Still, people want Korotev to confirm that what they have is a meteorite.

"I've heard this over and over again," he said. "'I heard a thump and went outside and found this rock that wasn't here yesterday.'

"I can't help noticing that every single rock that people show me or send me a picture of that 'wasn't here yesterday' is just about the size of a hardball. More than likely, it was chucked into the yard by some mischief-maker."

Korotev said the public can purchase very small samples of legitimate lunar or Martian meteorites on ebay. Big samples of "regular" — asteroidal — meteorites also can be purchased, and there are museums and dealers who can confirm or deny meteorite designation.

There's a laboratory in northern Arizona that, for a fee, will do a complete petrographic — analysis of thin sections of the sample under a microscope — to determine if it's a meteorite.

Korotev has his Web site up to help people and to engage them in science. He gets a wide range of responses.

"I had a fellow ask: 'Do two meteorwrongs make a meteorite?'" he said. "I've had wonderful conversations with schoolchildren in the Philippines and housewives in Scotland, but there are some people who are so convinced that they have a meteorite that they end up not liking me.

"I have a place on the site that suggests that before sending to me, read some of the responses I've gotten from people who don't accept our conclusions. There are some pretty outspoken people who think that I'm an idiot.

"The truth is, it appears human nature just doesn't like to accept the easy explanation."

Parkway

Could inherit Highway 40 construction traffic

– from Page 1

spokesperson Cathie Farroll, "so all of the plants produce and distribute the Superpave at night.

"But it's durable, and if we have the opportunity, we want to use the right surface. We have a chance to do it right with a premium product to ensure a more durable surface."

Especially considering that when major construction begins on Interstate 64 (Highway 40), many of its usual commuters could use the Parkway as an alternative.

In the interim, work continues along the Parkway.

A challenge at the Skinker Boulevard/Parkway intersection is that the barriers preventing northbound Skinker traffic from making a left onto the Parkway, or eastbound Parkway traffic making a left onto Skinker, need to remain in place until the station access tunnel is complete. Then, the panels forming the bridge over the tunnel can be removed and paving can commence.

Heading west from that intersection, most of the pavement work is done and the signals have been installed — but not turned on just yet — as far west as Pershing Avenue.

"We've had some late design issues, so it will be awhile before we get westbound Parkway into Clayton completely open," Farroll said, "because once you get past Pershing, the next place to exit the Parkway is Shaw Park Drive.

"Right now, we are working on approval for our redesign of that exit ramp."

But, a few minor roadblocks aside, the Parkway should be complete and open by the end of spring.

"As soon as the sections are open, approved and accepted, we will work with the municipalities on getting the traffic back on the roads," Farroll said. "When we do, it has to make sense with the traffic flow, which is why the municipalities will be involved with it.

"We just can't open a section and have people driving through residential neighborhoods among churches and schools without a plan. We have all sorts of issues to balance."

The overall MetroLink expansion is on schedule to open in September or October.

Notables

KEVIN LOWDER

Hip jazz **The Hip Jazz Quartet performs recently in Holmes Lounge as part of the Jazz at Holmes series. The group (from left) is Maurice Carnes, drums; Theo Harden, bass; Daniel Campbell, trumpet; and Peter Martin, piano. Martin can be seen and heard in George Clooney's feature film *Good Night, and Good Luck* as the pianist with jazz singer Diane Reeves. A native of University City, he has long resided in New Orleans but recently returned to the St. Louis area, with his wife and their three children, after his 100-year-old home was deluged in Hurricane Katrina flooding. For more information on the Jazz at Holmes series, go online to *wupa.wustl.edu/jazzatholmes.***

Olin School tabs Bouffides as M.B.A. assistant dean

BY SHULA NEUMAN

Evan Bouffides recognizes a good opportunity when he sees it.

Last year, during a vacation in Puerto Vallarta, Mexico, with 10 admissions professionals from around the country, Bouffides learned about the Olin School of Business' search for an assistant dean and director of M.B.A. admissions and financial aid from Stephanie Bartelt, assistant director of M.B.A. admissions at the Olin School.

Bouffides, 40, had spent the past eight years at the University of Southern California's business school, where he was the admission director for the school's executive and part-time M.B.A. programs.

"I liked USC an awful lot, but I don't have a family, so there's not much tying me down and keeping me from moving around the country," Bouffides said. "It was almost a no-brainer. I had wanted to get back to working in full-time M.B.A. programs, so I perceived this to be an excellent career opportunity."

Bouffides said he was ready to experience a new business school environment, and the Olin School fits the bill. In just the first few weeks, his input was solicited on several issues. He was surprised by how eager the school seems to get everyone involved.

Bouffides is ready to dig into his job. He said he's especially looking forward to winning.

"I get competitive about this stuff. I want to beat our direct competitors, and I know there are ways I can help," Bouffides said.

Bouffides

Bouffides' life isn't all work, but his devotion to his favorite athletic teams may get him into trouble in St. Louis. He's an avid USC Trojans fan, and he follows the Boston-based Celtics, Patriots and Red Sox very closely.

Bouffides said he's taken up trekking, which he had the chance to do on a trip to Africa. With a master's degree in filmmaking and screen writing among his seven degrees, he also spends a good deal of his free time writing.

"I do aspire to make a living as a writer," Bouffides said. "But until that happens, I'll keep my day job."

Alexander Technique funding available

BY LIAM OTTEN

The Performing Arts Department in Arts & Sciences is taking applications from University faculty, staff and students who wish to receive funding assistance to study Alexander Technique.

The method, which focuses on improving body movements and physical function, commonly is studied by athletes and performing artists, as well as by those simply hoping to prevent unconscious habits that can interfere with good health and physical activity.

The deadline for applications is March 1, with awards to be announced in mid-to-late March.

A scholarship has been made possible by a donation from the late Samuel E. Schechter in memory of his son, David.

For more information, go online to *padarts.wustl.edu*.

For the Record

Of note

Rich O'Donnell, director of the University Electronic Music Studio and applied music teacher of percussion in Arts & Sciences, has released a CD on the mutablemusic label titled *THE ART OF IMPROVISATION-LEROY JENKIN'S DRIFTWOOD.* The music was a live recording of a concert in New York City in October 2004. …

The American Society for Investigative Pathology has selected **Steven L. Teitelbaum,** M.D., the Wilma and Roswell Messing Professor of Pathology, as the 2006 recipient of the Rous-Whipple Award. The society gives the award annually to a pathologist over the age of 50 with a distinguished career in research. The recipient receives a plaque and a $5,000 honorarium and delivers a lecture at the society's annual meeting in April. Teitelbaum was honored for his research into bone disorders, including the development of the first cure for osteopetrosis, a fatal condition in which the cells that normally resorb bone are dysfunctional. …

Eric Mumford, Ph.D., associate professor of Architecture in the Sam Fox School of Design & Visual Arts and director of the Master of Urban Design Program, recently served as an invited respondent at the Society of American City and Regional Planning History conference in Miami. In addition, Mumford lectured on "Sert and CIAM" at the Fifth Docomomo International conference in Barcelona, Spain. He was also recently appointed book review editor for Europe, Africa and Asia after 1750 for the *Journal of the Society of Architectural Historians.* …

Jason Wingert, doctoral student in movement science in the School of Medicine, has received a two-year, $49,472 grant from the National Institute of Health for research titled "Sensory Function and Cortical Activity in Cerebral Palsy." …

James Wang, a senior majoring in biology in Arts & Sciences, was named to the 2006 All-USA College Academic second team as announced by *USA Today.* He was named to the second team last year. Wang's research focuses on understanding the role of SCIP transcription factor in myelination of Schwann cells.

Addendum

Feb. 10 issue, Page 6: A list of individuals from WUSTL and the topics they were to discuss at the American Association for the Advancement of Science's meeting Feb. 16-20 did not include The Career Center's Leigh E. Deusinger and Arlene V. Taich. Deusinger, business development specialist, and Taich, Ph.D., graduate career strategist, will give a presentation titled "Power Search Strategies: Mining Gems From the Hidden Job Market."

Campus Authors

Edited by Carol Diaz-Granados, Ph.D., research associate and lecturer in the Department of Anthropology in Arts & Sciences

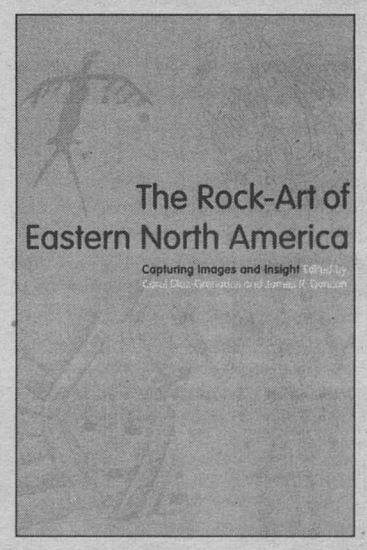
The Rock-Art of Eastern North America: Capturing Images and Insight

University of Alabama Press (2005)

The Rock-Art of Eastern North America brings together 20 papers on rock-art research ranging over 12 states and four Canadian provinces. Authors include professional archaeologists and art historians, as well as retired orthopedic surgeon, a carpenter, a lawyer, two photographers and others. Sections focus on the history, ethnography, recording methods, dating and analysis of pictographs, petroglyphs and dendroglyphs (or carvings on trees). A selection of chapters integrates this information with the archaeological data.

Rock-Art is within the same realm of archaeology as is material culture with its portable artifacts, and it is an excellent record of in situ human activity. *Rock-Art* is finally coming into its own as these iconographic remnants on the landscape become recognized as windows into the ancient objects and clothing, lifeways and belief systems.

—(From the back of the book)



"I'd been trying to put together a book like this for a few years because I'd been organizing and chairing symposia on the topic at national and regional meetings and had access to many rock art scholars and papers," Diaz-Granados said. "Eastern rock art research is lagging behind western rock art research. We needed to catch up and this volume is a major first step."

This is the first book of its kind, Diaz-Granados said. "It is the first in-depth look at these often neglected, and endangered, archaeological resources. The book is a collection of 20 papers on American Indian rock carvings and paintings ranging over 12 states and four Canadian provinces."

Rock-Art is available at the Campus Store.

— Neil Schoenherr

Employment

Go online to **hr.wustl.edu** (Hilltop Campus) or **medicine.wustl.edu/wumshr** (Medical Campus) to obtain complete job descriptions.

Hilltop Campus

For the most current listing of Hilltop Campus position openings and the Hilltop Campus application process, go online to hr.wustl.edu. For more information, call 935-5906 to reach the Human Resources Employment Office at West Campus.

Assoc. Dir. of Capital Projects 050246

Exec. Dir. Regional Development Progs 050248

Islamic Studies Catalog/Subject Librarian 050260

Health Services Physician 050266

Assoc. Dir, MBA Career Advising 050278

Lab Technician IV 050279

Admissions Officer 060018

Assoc. Dir. of Development, En & App Sci 060027

Regional Dir. of Development 060045

Assoc. Dir. of Development, School of Business 060060

Curator Modern Lit. Collection/Manuscripts 060094

Dir. of Development, School of Social Work 060096

Technology Services Specialist 060105

Sr. Dir. of Development Arts & Sciences 060109

Health & Safety Technician—Clinical Specialist 060119

Health & Safety Technician—Research Specialist 060134

Department Secretary 060139

Catalog Librarian 060145

Funding Resources Coord. 060152

Regional Dir. of Development 060155

Database Manger, Career Resources Librarian 060161

Residential College Dir. 060168

Research Integrity Coord. 060170

Dir., Network Systems & Ops 060171

Mechanic (Bargaining Unit Employee) 060173

Asst. Dir. of the Teaching Center 060174

Assoc. Dir. of Development, School of Law 060175

Service Center Team Leader 060176

Prospect Identification Asst. 060178

Radiation Safety Specialist II 060179

Treasury Analyst 060180

Planned Giving Officer 060183

Special Programs Coord. 060184

Admin. Coord., PhD Admissions & Stu Serv 060186

Asst. Manager Capital Projects & Records 060187

Programmer Analyst II 060188

Asst. Supervisor of Gift Processing 060190

Student Involvement/Multicultural Leadership 060192

Research Asst. 060193

Library Asst.—Archives 060194

Senior Accountant—Tax 060195

Supervisor of Cash & Credit Operations 060196

Department Secretary 060197

Medical Campus

This is a partial list of positions in 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.

Research Technician I 060745

IBC Asst. II 060754

IBC Asst. II 060770

Medical Asst. III 060786

Medical Asst. II 060787

Accounting/Purchasing Asst. I 060788

RN—Research Patient Coord. 060789

Patient Billing/Services Rep. II 060790

Patient Billing/Services Rep. II 060791

Nurse Practitioner 060793

Secretary I—Part-Time 060794

Coord.: Laboratory Support Services 060795

Custodian 060800

Medical Records Clerk 060802

Secretary III 060803

Patient Billing/Services Rep. II 060804

Medical Secretary III 060805

Patient Billing/Services Rep. II 060808

Medical Secretary II 060810

Patient Billing/Services Rep. II 060811

Ultrasound Technician 060812

Medical Secretary II 060813

Administrative Coord. 060816

Medical Asst. II 060817

Ophthalmic Asst. 060818

Ophthalmic Asst. 060819

Ophthalmic Asst. 060820

QA Auditor 060822

Medical Records Clerk 060821

Washington People

Fighting the good fight

Paul Goodfellow works to identify the genetic changes that lead to cancer

By Martha M. Everett

Paul J. Goodfellow, Ph.D., is in a professional war with cancer. The professor of genetics, surgery, and of obstetrics and gynecology brings an arsenal of knowledge and passion to his research battle with the formidable adversary.

"Disease is competition. In the case of cancer, it's like Darwinian evolution: The best genetic material wins," Goodfellow says. "With cancer, it's a cat-and-mouse game. The cancer cell needs to change its genetic makeup to outsmart the host."

Using what he calls "clinical specimens," Goodfellow looks at inherited factors contributing to cancer risk. Through his research in the Cancer Genetics Program at the Siteman Cancer Center, Goodfellow works to identify the genetic changes that lead to cancer, particularly endometrial, or uterine, cancer. By better understanding the genetic causes of the disease, he hopes to halt its progression through screening, early detection and intervention.

Endometrial cancer is the most common cancer of the female reproductive organs, according to the American Cancer Society. There were an estimated 40,880 new cases diagnosed in the United States last year, making it the fourth most common cancer in women. Although 7,310 women died from the disease in 2005, Goodfellow says there are more survivors of endometrial cancer than any other gynecologic cancers.

Goodfellow's work is a manifestation of his dedication to health.

"I believe in the importance of translating research findings to improved patient care," he says.

David G. Mutch, M.D., the Ira C. and Judith Gall Professor of Obstetrics and Gynecology, collaborates with Goodfellow on endometrial cancer research. Mutch says Goodfellow is aptly named.

"He's a great friend and collaborator," Mutch says. "Paul is the ultimate team player. Paul spends more time helping others than helping himself. He is dedicated to teaching and helping others."

It's in the genes

Born near Kingston, Ontario, Goodfellow traces his interest in biology and botany to his childhood in rural Canada. He attended a one-room schoolhouse, and frequently he'd walk through fields to get there. Those walks sparked observation of and appreciation for nature.

After earning an undergraduate degree in biology from Queens University in Ontario in 1978, he came to the United States for a master's degree in plant pathology at the University of Tennessee.

His early academic work involved agricultural genetics. He considered studying the effect rootworms have on different strains of tobacco. But the purpose of the research by tobacco companies is to be able to plant the most resistant strain of tobacco, something Goodfellow felt was "dirty."

That led to his work in human genetics and a Ph.D. in biology/pediatrics from Queens University in 1985, a time when genetic research was blossoming.

The path was a good one for Goodfellow, whose excitement about his research is evident as he moves to the edge of his chair and gestures with animated enthusiasm to describe it.

"Genes are the root cause of cancer, and genetic research holds the promise of getting to what's going wrong," he says.

Specifically, he strives to understand how DNA replication fails in the cancer cell and what that means in terms of genetic decline.

DNA replication is a complex process. Each cell has 3 billion base pairs of DNA that must be copied with every cell division.

"With a genome of 3 billion base pairs, a lot can go wrong," Goodfellow says. "Along the way, there can be mistakes."

Under normal circumstances, each base pair match is checked, and any mismatches are repaired by enzymes. But if cells lose their ability to repair DNA mismatches, that can lead to genetic mutations. Such genetic damage can cause cells to grow where they shouldn't, resulting in cancerous tumors.

"Genetic damage occurs over time," Goodfellow says. "It's wear-and-tear on genetic material that leads to cancer. We live a long time, and as we age the machine begins to break down. Once you lose genetic repair in long-lived cells that normally repopulate tissues, you are on a slippery slope. The ability to acquire lots of genetic damage allows a tumor cell to compete in a body."

Goodfellow's research involves comparing healthy cells with cancerous tumors. Using a library of more than 700 tumors, Goodfellow sometimes compares them to cancer-free cells from 750 healthy subjects older than 65 (his goal for the project is 2,000 healthy men and women). As the tumors carry the mutations, comparison with healthy cells could be the key to recognizing where and how the damage occurred.

Those findings will help identify the inherited factors that lead to the shut down of DNA repair, allowing women and their family members to learn who is at risk and seek earlier cancer screening and detection.

> **"Genes are the root cause of cancer, and genetic research holds the promise of getting to what's going wrong"**
> PAUL J. GOODFELLOW

Already, Goodfellow's research has contributed to medical knowledge, Mutch says.

"I feel very lucky to have shared a collaboration with him over the past 12 years," Mutch says. " We have published more than 40 papers together, and during this time, he has identified many genetic abnormalities that have led to a better understanding of the genesis of endometrial cancer."

Alison J. Whelan, M.D., associate dean for medical student education, agrees. She has worked with Goodfellow as co-director of the Hereditary Cancer Registry Core at Siteman.

"Paul Goodfellow is the quintessential academic scientist," she says. "He is a critical thinker with a great curiosity and attention to detail that together lead to first-rate research."

His best genetic work

Goodfellow is as dedicated to family as he is to his work. It is his personal life that he says is "the best genetic work I've done." By that, he means his two sons, Jamie, a freshman majoring in economics and history at Queens University, and Jonathan, a sophomore at Clayton High School.

In Goodfellow's office hang two oil paintings by his wife, artist Carol Stewart, and photographs of his family on vacation. As outdoor enthusiasts, the family spends summers in what Goodfellow calls "cottage country" in eastern Ontario. Both boys are avid lacrosse players — the national sport of Canada.

"Our children are both of the Canadian lifestyle," Goodfellow says.

Along with medical-research collaboration, Goodfellow collaborates with his wife on art projects, including collages on display in the Farrell Learning and Teaching Center. Representations of his medical research, the works contain DNA gel analyses and colorized images of actual tumors.

Goodfellow, who joined the School of Medicine in 1992, said he enjoys the St. Louis area.

"St. Louis has been a wonderful home academically and for our family," says the Clayton resident.

Previously, he had spent four years as an assistant professor in the Department of Medical Genetics at the University of British Columbia and three years at the Imperial Cancer Research Fund in London as a postdoctoral fellow and visiting research fellow.

Through the years, he has coauthored 126 journal articles, 13 reviews and book chapters and 92 abstracts. He also has received numerous awards, including the 2003 Washington University School of Medicine Academic Women's Network Mentor Award. "It was an honor to receive that as a recognition of contributing to the career advancement of women," Goodfellow says.

Passing the torch

Teaching and assisting others in their careers are areas in which Goodfellow shines.

"Paul is a standout as a role model for academic medicine," Whelan says. "He is a terrific collaborator and a wonderful teacher and mentor to students, postdocs and young faculty members. His willingness to invest time, energy, enthusiasm and intellect in support of others' research is truly remarkable."

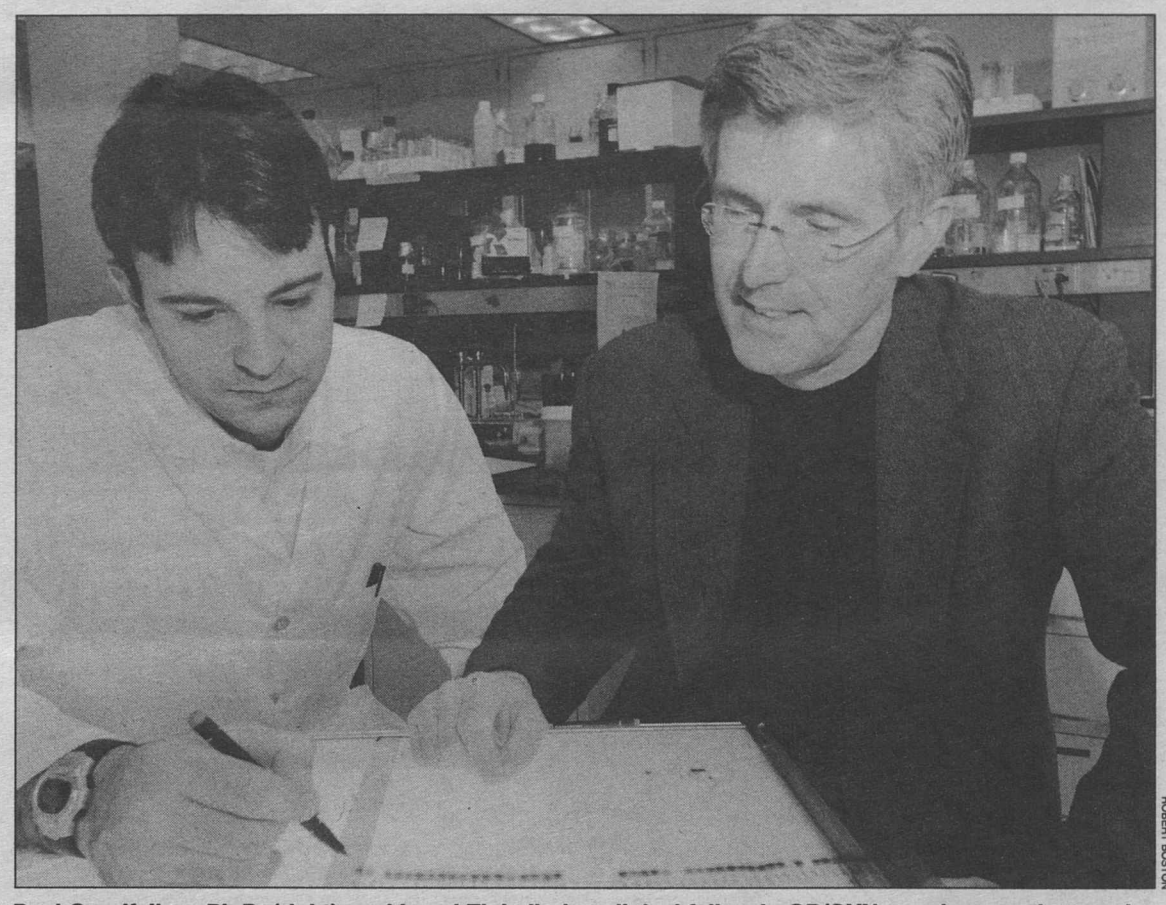
Such investment pays off in personal satisfaction.

"Knowledge sharing is really important to me," Goodfellow says. "I am part of a team."

That team includes not only Goodfellow's colleagues — with whom he enjoys sparring intellectually in review panels — but also the students, other trainees and staff who work in his lab. Among his greatest rewards, he says, is knowing that he helped someone as they progress in academic medicine."

Like genetic copying, Goodfellow passes his knowledge to future generations who will keep up the good fight.

"The one thing we aspire to," he says, "is to replace ourselves with better people who will make a difference."



ROBERT BOSTON

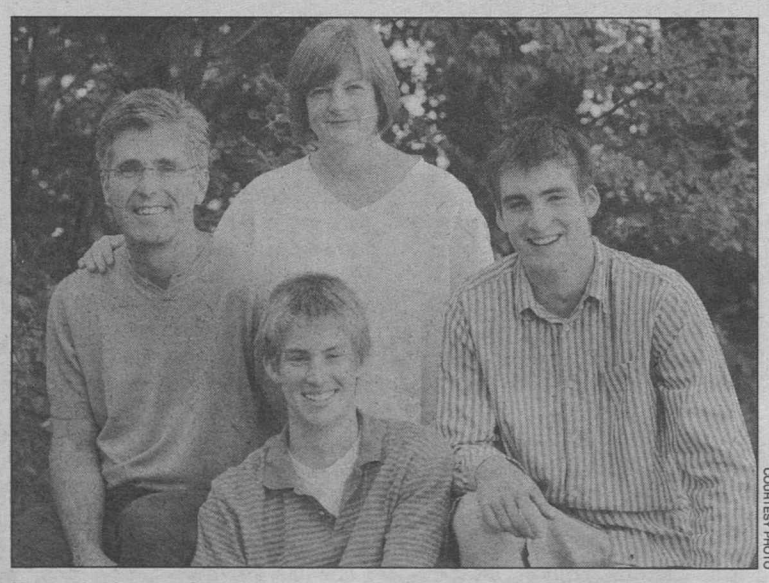
Paul Goodfellow, Ph.D. (right), and Israel Zighelboim, clinical fellow in OB/GYN oncology, evaluate gels to identify mutations in a DNA repair gene in endometrial cancer specimens.

Paul J. Goodfellow

Title: Professor of genetics, surgery and of obstetrics and gynecology

Family: Wife, Carol Stewart, an artist; two sons, Jamie and Jonathan.

Goodfellow collaborates with his wife on art projects, including collages on display in the Farrell Learning and Teaching Center. The works, which are representations of his medical research, contain DNA gel analyses and colorized images of actual tumors.



COURTESY PHOTO

(From left) Paul Goodfellow, his wife, Carol Stewart, and sons Jonathan and Jamie are all outdoor enthusiasts who like to spend summers in eastern Ontario.