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biosensors could save heart-attack victims.

**Skills** 

New

Survival

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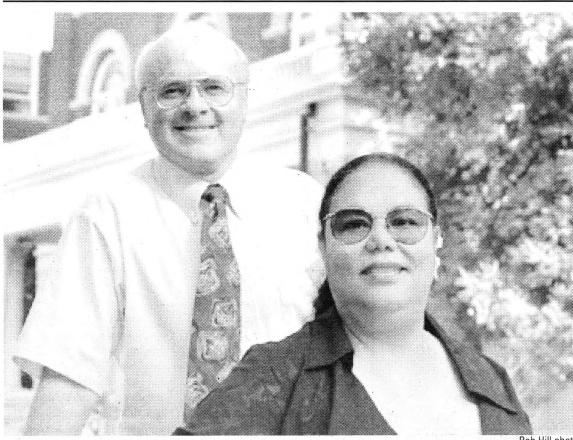
#### **Taking Center Stage**

Theater professor Suzanne. Burgoyne wins national teaching award for college theater.

#### Genetic **Gatekeepers**

MU researchers study the basic science behind pollen selection in plants.

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WELCOME ADVICE As recipients of this year's Excellence in Advising Awards, Flore Zéphir and Jerry Griffith know

# Making a difference

**KEY TO SUCCESS** Advisers steer MU students in the right direction

dvising may not be a high profile activity, but Mizzou's advisers spend an inordinate amount of time ensuring that students' time spent at MU is both successful and rewarding.

To recognize their efforts, the

MU Advisors Forum established the Excellence in Advising Awards. Each year, the awards which carry a \$1,000 stipend are given to a faculty and a staff adviser who make a difference in students' lives. This year, the honors go to Jerry Griffith, senior academic adviser in the Sinclair School of Nursing, and to Flore Zéphir, associate

professor of Romance languages and literatures.

Nearly 300 students are enrolled the nursing school's program that allows registered nurses to obtain a bachelor's degree in nursing. Some of those students have only recently obtained an associate of arts degree; others have been out of school 20 years or more. It is

Griffith's responsibility to steer them in the right direction, but because this is an Internet-based program, he rarely sees any of them in his office. This, in itself, is challenging enough; however, he says he faces a more daunting test: encouraging the students and keeping them going until they get their degrees.

June 26, 2003

University of Missouri-Columbia

"They are all part-time students combining school with jobs, families and everything else that affects the amount of time and effort they put into completing their degree," says Griffith who has been at MU for 12 years. "Some people need a lot of handling to get through the program, and my job is keeping them on track and letting them know they can get it done.'

The 10 students going through MU's accelerated bachelor's of nursing program are on campus and assigned to Griffith. Their goal is to get a bachelor's degree in 15 months instead of the normal two years. To some degree, advising these students is more satisfying for Griffith because of his personal contact with them.

Sometimes the information he imparts to prospective students can be difficult to hand out, particularly when it is obvious the student will not be accepted into the school. "My goal there is that no one leaves my office feeling hopeless," Griffith says. "I can give them some kind of direction or guidance for the future and some hope that

something will work out for them. That is what gives me some sense of satisfaction."

Students who come to Zéphir with frustration and uncertainty about their program of study leave her office reassured, knowing they have been given precise answers to their questions. "Students want consistency," she says. "They appreciate it when you are willing to spend time making phone calls and writing e-mails on their behalf."

Zéphir recently celebrated 15 years of service at MU. She has advised students since 1991, starting in the College of Education. In 2000, she took over the responsibilities of director of undergraduate studies for Romance languages and literatures. Over time, she has guided and mentored approximately 500 undergraduate students, 60 master's students and two doctoral students.

The challenges of getting students from backpacks to diplomas are many. Zéphir says the biggest one is keeping abreast of changing rules and regulations. Still, there are noticeable rewards. "I see the benefits when parents send me cards of thanks for helping their children obtain degrees from MU or when parents come into town and they want to meet me," she says. "Some of them refer to me as being like a second parent to their child. That is what keeps me here."

## Education assistance plan for families is up and running

#### **TUITION REDUCTION**

Application materials are now available online

long-awaited program that expands educational assistance benefits to the dependents and spouses of full-time University employees is up and running. Administrators have developed a policy to implement the new program and application materials are available online at a University Web site.

Faculty and staff members can also find answers at the Web site

to frequently asked questions about the program. The site is located at http://system.missouri.edu/hrs/cal

l-man.htm. Application materials are available at http://system.missouri.edu/recor

ds/hrformsindex.html

The program provides a 50 percent reduction of educational fees for eligible dependents and spouses. For their family members to be eligible, faculty and staff must be benefit-eligible employees with at least five years of continuous full-time service.

Eligibility for dependents is based on the same criteria required under the University's medical benefit plan for dependents. Each family member is limited to 140 hours of course

The new benefit will cover college credit courses in all undergraduate, graduate and professional programs at the University. However, the 50 percent tuition reduction will be based on the amount of fees charged an in-state student for undergraduate courses. The policy also spells out that only

educational fees are covered by this program. Computing and supplemental fees, books and activity fees are the responsibility of the student.

The program also will cover college credit courses offered through MU in the Evening and distance education courses offered by MU Direct and the Center for Distance and Independent Study.

The Q-and-A section on the Web site deals with some of the more specific questions that faculty and staff might have. It covers, for instance, what the

eligibility criteria are for dependents. According to an analysis by the UM Human Resources office, the estimated annual cost of the program for all four UM campuses is slightly more than \$1 million, or .15 percent of the University's total payroll. An earlier review of employee data found that 2,001 faculty and staff members who were eligible for the program had dependents or spouses enrolled at the University.

#### Math by the book

Research has long documented the profound influence textbooks have on how mathematics is taught. Research also has continued to find that American youths struggle in mathematics.

By the time they graduate from high school, U.S. students perform worse than most secondary students tested in 41 nations. MU math education researchers are recommending specific middle-school texts that could dramatically improve the math education of American students.

"Unlike most countries strong in mathematics, the

United States doesn't have a national education standard for textbooks," says Barbara Reys, professor of education and director of MU's Show-Me Project, a national center focusing on middle-grades mathematics curriculum. Most middle-school math books are too long - 600-700 pages and rarely cover any subject in depth, she says. "Most countries with strong math backgrounds use books containing 100 to 200 pages and cover key mathematical topics in great detail."

At the middle-school level, Reys says, U.S. textbooks have historically emphasized skills rather than problem solving and focused on topics normally addressed earlier in other countries. Reys says research has found that middle-school students who use standards-based math curricula outperform students of more traditional programs. They also have a positive attitude toward mathematics.

#### Let the games begin

The 2003 Show-Me State Games are coming to town. For three consecutive weekends beginning July 18, nearly 25,000 competitors of all shapes, sizes and ages will

converge on Columbia to participate in the annual Olympic-style games that promote physical fitness and health for all Missourians.

The Show-Me Games are the largest state games program in the nation, and they wouldn't be possible without help from nearly 1,000 volunteers. Volunteers help with everything from timing and scorekeeping to handing out water and registering the athletes who compete in nearly 30 sports that range from archery to wrestling.

Show-Me State Games organizers are putting out a call for volunteers to keep the games running smoothly. This year the games will be held July 18-20, July 25-27 and August 1-3. For information about volunteering, call the Show-Me State Games at 882-2101.

## Low-level alcohol use raises risk of injury

#### **DESTROYING MYTHS**

Researcher hopes study will spark public discussion on alcohol use

lcohol's burden on society is undisputed. The economic impact alone is staggering. According to the National Institute on Alcohol Abuse and Alcoholism, billions of dollars in earnings are lost each year due to alcoholism and alcohol-related incidents. Billions more are spent on medical costs and public services.

Despite all the information about the societal problems due to alcohol, few studies show the impact of short-term exposure to the prevalent drug. New findings by an MU researcher demonstrate that a person's risk

of injury increases significantly after only two standard drinks, such as two 12-ounce beers.

"Before our study, it was hard to find the association between risk of injury and short-term exposure to alcohol," says Dan Vinson, family practice physician and professor of family and community medicine. "This study shows that just two drinks during a six-hour period more than double the chances that a person will sustain some type of injury."

Vinson's research destroys popular myths about how much alcohol people can safely consume in a given time period. For example, three or four drinks consumed over a six-hour period – a quantity generally accepted as safe if the drinks are distributed

"We're not talking about alcoholism in this study. We're talking about common, ordinary behavior."

Dan Vinson,
 professor of family and
 community medicine

at one or less per hour – multiplies the risk of injury by five. Five or six drinks in the same time period increase the risk of injury 10-fold. Overall, the study provides strong evidence that short-term, acute exposure to alcohol poses a serious threat of injury.

"We're not talking about alcoholism in this study," Vinson

says. "We're talking about common, ordinary behavior."

As predicted before and during the study, Vinson believes the findings provide important data that could influence public policy. The study indicates that the typical person is substantially impaired before reaching a blood-alcohol content of 0.08, the current level for being considered legally drunk in Missouri. To illustrate this, a 160-pound man who consumes four drinks in one hour would have a blood alcohol content of 0.08 at the end of that hour, as would a 135-pound woman who consumes three drinks in one

The study used the casecrossover method, a relatively new study design developed by Malcolm Maclure, one of the coinvestigators. The researchers compared patients' drinking consumption in the six hours prior to their injury with their drinking consumption in the same six-hour block of time the day before.

The researchers obtained their data from interviews with individuals who were treated for injuries in one of Columbia's three emergency rooms.

Researchers also compared the subjects to a community-control group and discovered very similar findings.

Vinson hopes his study will spark a public discussion about the implications of low- to moderate-levels of alcohol consumption. He says the information should help family practice physicians answer the common question of how much alcohol may be consumed without endangering one's health. Vinson's study was published in the May issue of the *Journal of Studies on Alcohol*.



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for details.

### **Public Notice**

The University of Missouri-Columbia operates a public water system and is required by law to report annually to the EPA and the public on the state of the quality of the campus water supply. For the calendar year 2002, the campus water supply met all EPA quality standards with no regulatory violations.

More information is available about the University's water quality at www.cf.missouri.edu/energy/ccr.stm, or you can contact Environmental Health and Safety, 882-7018, for a copy of the 2002 "Consumer Confidence Report."



### MizzouWeekly

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Editor John Beahler
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**Assistant** Anne Johnson **Photographers** Rob Hill,

Steve Morse

Writer/designer Sue Richardson

#### On the digital trail of Lewis and Clark

A new MU Web site follows the trail of the Lewis and Clark expedition and provides updates on bicentennial activities. Events listed on the site range from educational symposiums and exhibitions to local celebrations and bicycle tours along the path of the historic 26-month journey from St. Louis to the Pacific Ocean and back.

The site also includes historical research, journals and articles about the expedition. Maps show campsites in what are now

towns and color photography of the wilderness the Corps of Discovery experienced.

The Web site is offered by the Missouri Watershed Information Network, an information center that is a joint venture of 30 state and federal agencies as well as interest groups promoting a sound environment through water quality. The Lewis and Clark Web site is located at outreach.missouri.edu/mowin /Rivers2/lewisclark.html.

#### Pav me now or pay later

As Missouri struggles to balance its budget, publicservice personnel may find the grass is greener in surrounding states. MU researchers have found that Missouri lags behind its neighbors in qualifications and compensation for humanservice positions.

Social work faculty members Paul Sundet and Charles Cowger studied publicservice personnel in child protection, probation and parole, juvenile justice, mental health and substance abuse.

The study compares compensation data and entrylevel qualifications for workers and first-line supervisors in Missouri with the same positions in six bordering states.

According to the study, Missouri lags behind its competition in many respects. For example, a child welfare protective-services supervisor in Missouri must have an undergraduate degree and two years of experience to qualify for the position, a standard that is lower than five of the six comparison states. This same supervisor can expect to earn an entry-level salary that is

\$8,000 less than the average entry-level salary of the comparison states.

"The quality of human resources is the most critical element in the delivery of human services," Sundet says. "We hope this research will help lead Missouri to increase its investment in public-service personnel, which will increase the competence and quality of public human services."

## Engineering controls for plant gene flow

#### **RIPE FOR RESEARCH**

Study uncovers basic science behind pollen selection in plants

he system some plants use to naturally recognize and reject pollen from other plants might one day prevent genetically modified (GM) crops from pollinating non-GM crops of the same species.

"Cross-pollination between GM crops and non-GM hybrids or wild relatives is one of the most controversial aspects of GM crop use today," says Nathan Hancock, a biochemistry doctoral candidate at MU. "No one knows for certain what the potential environmental consequences could be, so engineering a control for gene flow would be useful."

Bruce McClure, associate professor of biochemistry, has researched pollen recognition and rejection for more than a decade. Under McClure's direction, Hancock has examined mechanisms that allow plants to distinguish different types of pollen. He has focused his efforts on Nicotiana alata, or flowering tobacco, a common bedding plant.

"Plants can't control what pollen lands on them, as it's often distributed by indiscriminate agents such as birds, insects or the wind," Hancock says. "To prevent either inbreeding or interspecies breeding, they've developed a group of toxic proteins, called S-RNases, that serve as pollination gatekeepers."

Hancock explains that these proteins are found in the style, the floral structure through which pollen grows to reach the ovary, fertilize an ovule and create a seed.

"Each plant has specific criteria for compatible

pollination, a set of gates through which the pollen must pass," he says. "If the pollen doesn't have the right keys to unlock the right gates, the toxic proteins stop their growth."

In addition to the gatekeeper proteins, another set of proteins are involved in pollen recognition and rejection. Called glycoproteins, Hancock says these proteins are thought to help guide compatible pollen through the style, providing nutrition along the way.

The MU researchers have identified some specific proteins that appear essential to the pollen recognition and rejection system in flowering tobacco. Their next step is to remove, or "knock out," the genes that provide instructions for

#### **GENETIC GATEKEEPERS**

Biochemistry doctoral candidate Nathan Hancock is researching the biochemical mechanisms plants use to recognize compatible pollen and reject pollen that is not compatible. Jim Curley photo

producing the proteins, then grow plants and test for effects on pollination behavior.

Since the biotechnology industry began developing GM crops, private companies have tried developing mechanisms for

One type of system, known as "terminator" technology, allows pollen to fertilize an ovule and form seed; however, the seed is sterile and cannot make a new plant.

corn, and perhaps one day GM crops won't pollinate non-GM crops," Hancock says. But before we can control gene flow, we first must understand the basic biochemical mechanisms."



controlling GM cross-

"Tomatoes don't pollinate



publication. Please include a check made payable to University of Missouri and send to Mary Bono, Mizzou Weekly, 407 Reynolds Alumni and Visitor Center, Columbia, MO 65211.

# calendar



#### **Concerts & Plays**

Friday, June 27

**SUMMER REPERTORY** 

THEATER: Oliver will be performed at 8 p.m. today, June 28, July 2, 3, 11, 17, 19 and 23, and at 2 p.m. on June 29, July 20 and 27 at the Rhynsburger Theatre. For ticket information, call 882-PLAY.

#### Tuesday, July 1 MIZZOU AMPHITHEATER

CONCERT: Widespread Panic will perform at 7:30 p.m. at the Amphitheater at Mizzou. Tickets are available at the Hearnes Center Box Office and all Ticketsmaster locations

all Ticketmaster locations.

COMEDIES IN CONCERT
SERIES: Jewish Dating Cycle
will be performed at 8 p.m. at
the Corner Playhouse. Tickets
are \$3 at the door and are free
to season subscribers.

#### Tuesday, July 8

COMEDIES IN CONCERT SERIES: He Went Like One Who Hath Been Stunned will be performed at 8 p.m. at the Corner Playhouse. Tickets are \$3 at the door and are free to season subscribers.

#### Wednesday, July 9

SUMMER REPERTORY

**THEATER:** The male version of *The Odd Couple* will be performed at 8 p.m. today, July 12, 16, 24 and 26. The female version will be performed at 8 p.m. July 10, 13, 18 and 25 and at 4 p.m. July 12 at the Rhynsburger Theatre. For ticket information, call 882-PLAY.

#### Friday, July 11

**SHOW-ME SHOWS SERIES:** 

Performances begin 30 minutes after the Rhynsburger show is over today, July 12, 18 and 19. The cast will perform 20 pieces about life in Missouri in 40 minutes or the audience gets pizza. Tickets are \$5; season subscribers will receive one free ticket to one show. For ticket information, call 882-PLAY.

## Courses & Workshops

Tuesday, July 1

IATS TRAINING: "Excel 2000 Functions & Reporting" will be offered at 8:30 a.m. in N15 Memorial Union. To register, call 882-6006 or visit iatservices.missouri .edu/training/.

#### Wednesday, July 2

IATS TRAINING: "Access 2000
Forms and Reports" will be offered at 8:30 a.m. in N15
Memorial Union and "PowerPoint 2000
Fundamentals" will be offered at 8:30 a.m. in W005 Locust Street Building. To register, call 882-6006 or visit iatservices.missouri .edu/training/.

#### Tuesday, July 8

WORLD CULTURES

WORKSHOP: MU's Museum of Anthropology is sponsoring this free educational series for children ages 6-9. "Experience Cultures of Africa" will be offered from 9 a.m.-noon in 104 Swallow Hall. Class sizes are limited; to register call 882-3764.

#### Wednesday, July 9

**HUMAN RESOURCES** 

WORKSHOP: "Take Charge of Your Finances" will be presented from 8:30 a.m.-noon in S203 Memorial Union.
Registration is required; call 882-7760 or visit the Web site at http://web.missouri. edu/%7Ehrswww/hrd/hrdseminars.html.

#### Thursday, July 10

IATS TRAINING: "Access 2000 Fundamentals-Tables" will be offered at 8:30 a.m. in N15 Memorial Union. To register, call 882-6006 or visit iatservices.missouri.edu/training/.

#### Friday, July 11

Painting and Color" will be offered at 8:30 a.m. in W005 Locust Street Building. To register, call 882-6006 or visit iatservices.missouri.edu/training/.

#### **Exhibits**

**BRADY GALLERY:** 

"Mixed Media Collage," works by Kim Kabler Rootes, will be on display through June 27.

"Stoneware and Mixed Media,"
works by Rebecca Stonesanders,
will be on display through
July 11.

The gallery, located at 203 Brady Commons, is open from 10 a.m.-9 p.m. Monday-Thursday, from 10 a.m.-5 p.m. Friday, from 10 a.m.-4 p.m. Saturday, and from 1-5 p.m. Sunday.

ELLIS LIBRARY: Ceramics works by Yukari Kashihara, a recent MU master's graduate, will be on display through July in the Ellis Library colonnade. MUSEUM OF ART AND

MUSEUM OF ART AND
ARCHAEOLOGY: "Selections of Ancient Glass," an exhibit in memory of Gladys C.
Weinberg, is on display through 2003. The museum, located in Pickard Hall, is open from 10 a.m.-4 p.m. Wednesday-Sanurday.

STATE HISTORICAL

SOCIETY: "Objects Worthy of Notice: The Wildlife Encountered by the Corps of Discovery" is on display through June 27 in the main gallery. The main gallery is open from 8:30 a.m.-4 p.m. Monday-Friday. "What Wondrous Life: The World of George Husmann," an exhibit about the father of Missouri's wine industry, is on display through June in the corridor gallery. Corridor galleries are open from 8 a.m.-4:30 p.m. Monday-Friday and 9 a.m.-4:30 p.m. Saturday.

UNIVERSITY ARCHIVES: The

UNIVERSITY ARCHIVES: The University Archives offer a number of online exhibits that document the history of MU. The most recent exhibit, "The Heart of the University: MU Libraries," traces the history of libraries at system.missouri.edu /archives/librarex.html.

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## Eyes on the prize

**VISIONARIES** Stem-cell therapy targets progressive eye disease

U researchers have successfully transplanted mouse embryonic stem cells into mouse models for human diseases of the central nervous system. This stem-cell therapy might prevent or delay the death of defective host cells, and the findings could lead to stem-cell therapies for a variety of neurodegenerative diseases of the central nervous system, such as Alzheimer's and Parkinson's. The work also could lead to new treatments for spinal cord injury and stroke.

"One approach using stem-cell therapy is to deliver therapeutic agents that will prevent host nerve cells from dying," says Mark Kirk, associate professor of biological sciences. "It's the loss of brain cells that leads to the neurodegenerative disease process. If you provide host cells with something that sustains them, you may be able to cure or at least delay the onset of the pathology."

Kirk and MU colleagues Joel Maruniak, associate professor of biological sciences, Martin Katz, professor of ophthalmology; and graduate student Jason Meyer transplanted the stem cells into mice that had genetic mutations predisposing them to Batten disease, a progressive disorder that leads to retinal degeneration.

In humans, Batten disease eventually causes brain atrophy, seizures, cognitive decline and premature death. Before these latter serious symptoms surface, however, the disease impairs a victim's vision. Although Batten disease is rare, the stem-cell therapy approach to treat it applies to other diseases of the central nervous system, Kirk says.

Kirk's research team injected the stem cells during the early stages of photoreceptor degeneration. The stem cells injected into the mouse eye expressed green fluorescent protein that enabled the scientists to track the donor cells. The researchers also added a special acid to direct their cells' developmental fate, Kirk says.

The therapeutic effects of the stem-cell integration revealed a restoration of photoreceptors, the parts of the eye that are responsible for sensing and receiving light.



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# Taking center stage

#### **TOP TEACHER**

Theater professor chosen for national teaching award

sk Suzanne Burgoyne what she teaches, and she will tell you it is students. They, more than the subject matter, are the center of what she does at Mizzou. "I view students as colleagues and collaborators in the ongoing quest for knowledge, understanding and artistic growth," says Burgoyne, professor of directing in the theater department.

Her stance is one of the reasons Burgoyne was chosen as this year's Outstanding Teacher of Theater in Higher Education by the Association for Theatre in Higher Education. A former student's nomination got the ball rolling, and it was joined by more than 30 supporting letters from current and former students and colleagues worldwide.

In some ways, the saying "what goes around comes around" can be applied to Burgoyne's win. Last year she nominated a former undergraduate mentor for the theater association's Career Achievement in Higher Education Award, and he won.

"I was able to present the award to him," she says. "This was someone I had not seen for many years and who I don't think fully realized how important his mentoring and encouragement had been to me as an undergraduate. He was the one

who led me to decide to go to graduate school in theater, and the one who put me in contact with a professional theater school in Belgium where I got a Fulbright to study right out of undergraduate school.

"I was thrilled that I was able to help him get the recognition that I wanted him to have, because he had been so important in my life. And then to have it turn around this year and have someone nominate me for a similar award is very meaningful."

Beyond gaining national recognition, Burgoyne says the award affirms her teaching goals. "I am working with young artists in terms of their development as creative and scholarly thinkers. There is this wonderful sense that I am doing a good job and that I am doing what I want to do as a teacher. That is important to me."

At MU since 1989, Burgoyne teaches beginning and advanced directing and script analysis, and graduate seminars in the history and theory of directing. In the classroom, she stresses that there is no one right answer, and that she does not expect or want a classroom of cloned Burgoynes.

"Each student has different gifts and a different path to follow in life, as in art, and learning how to think in certain ways about a creative project gives the students freedom to believe in their own creative process and, thus, produce wonderful artistic discoveries," she says.

Doing theater allows one to learn more about one's self and the world, Burgoyne says. She has created a course that ROLE MODEL Theater professor Suzanne Burgoyne has a quick answer when she's asked what she teaches at Mizzou: students. Her student-centered approach played a role in her selection as Outstanding Teacher of Theater in Higher Education.

Steve Morse photo

supports this premise in a nontraditional way.

Her Theatre of the Oppressed class introduces a theatrical technique new to the community. Burgoyne was selected as a 2000/2001 Carnegie Scholar, a program that fosters the scholarship of teaching and learning. With four MU faculty from other disciplines, she studied the impact of the class on students' understanding of oppression.

Through audience participation, Theatre of the Oppressed looks at issues of power and oppression, and helps individuals and groups of people explore their own problems, such as violence, harassment and homophobia, and then search for solutions to the problems. "Looking at relationships between the individual experience and the larger social picture is part of what this kind of theater does," she says.

Students say that as a director, Burgoyne is a caring professor who puts her actors first. She challenges actors to go beyond the superficial level and uses debriefing exercises to ensure that they are all right.

The debriefing sessions are one of the experimental techniques she brings to the department. A representative from MU's Counseling Center leads weekly discussions with the actors who talk candidly about how performing their characters influences their lives.

"I think debriefing is helpful for us," Burgoyne says.
"Traditional theater doesn't take into account the negative or positive impact that doing theater has on the actors.
Traumatic material can affect people in many ways. The theater profession tends to ignore it or leave it up to the individual to deal with it.

"If we are going to be responsible teachers, we should help our students be aware that acting can have personal consequences and help them deal with them."

# The College of Business

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# Outstanding Staff Service Awards



Ron Howren

Programmer

Analyst

Thanks, Ron and Barbara, for your dedicated service to MU and the college.

Congratulations from the college's faculty and staff.



Barbara Schneider
Coordinator
Recruitment and
Admissions

## New biosensors could save heart attack victims

**SURVIVORS** Implants track chemical markers that signal onset of heart attacks

n the movies, heart attacks are sudden, intense and lethal. They kill swiftly. In real life, though, most heart attacks are mild. Many start slowly and fewer than half of them lead to death.

This survival rate is due in part to information and rapid emergency response. More people know the early signs of a heart attack and quickly seek medical attention. Research by Mizzou scientists could lead to

detecting a heart attack even sooner — before a person experiences physical symptoms.

"Several studies show that heart attack patients who get to a hospital quickly have a higher survival rate and less chance of massive damage to the heart muscle," says Sheila Grant, assistant professor of biological engineering and leader of a team of researchers who are developing an implant that will sense the early "markers" of a heart attack.

The human body experiences significant biochemical activity

long before the physical symptoms of a heart attack surface. As blood flow decreases and cardiac tissue deadens, cells release natural chemical markers, such as troponins, that indicate a heart attack is imminent. Grant's implantable biosensors monitor the release of troponins.

Researchers in Grant's laboratory are developing the biosensors for two types of deployment. One device, a glass disc that is approximately one centimeter square, can be implanted under the skin's surface. A second device is an

optical fiber that is designed to be inserted into blood vessels near the heart. Grant says this sensor may be coupled with a pacemaker. The device has had great success in sensing troponins in the lab setting, but designing a sensor that is compatible with the chemistry of the human body is more problematic.

"The sensing capability is there," Grant says. "We've already shown that we can sense troponins in the laboratory. The biocompatibility issue is much more complex. We have to try to fool the body into accepting this foreign material."

By fooling the body, Grant means that researchers must coat the sensors with a material that will allow them to integrate with surrounding tissue.Grant has received approval to test the sensors in clinical trials with rats but predicts it will take three to five years before human clinical trials can be established.



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# MIZZOU INTHE

Doug Abrams was quoted in an article in the June 15 Vancouver Province about "disappointment lawsuits" that parents file when they are unhappy with coaches in youth sports leagues. He also was interviewed on the topic June 16 on KDAF radio in Omaha, Neb., and KMOX in St. Louis, and by *Metro News* in St. Louis June 11.

St. Louis June 11.

Bernard Beitman, professor and chair of psychiatry, was the guest expert on a June 17 call-in program on KMOX radio in St. Louis that discussed the popularity of anti-depressants and whether they are prescribed too casually by physicians.

Frank Booth, professor of veterinary biomedical sciences, had his research on exercise and cardiovascular health mentioned in a May 24 article in the Sacramento (Calif.) Bee.

Harris Cooper, professor of psychological sciences, was interviewed about his research on summer school and homework on newscasts by television stations in Waco and Austin, Texas, and Cincinnati during the first week of June. Cooper also was quoted about students cheating on their class work in the April edition of *Redbook*.

Charles Davis, associate professor of journalism, was quoted in an April 11 article in the *New Orleans Times-Picayune* about tightening access to public records prompted by the war in Iraq and security concerns.

Margaret Duffy, associate professor of advertising, was quoted in an April 6 article in the Atlanta Journal-Constitution about Delta Airlines and its public relations problems. The article also ran in the The Deseret News in Salt Lake City.

A new drug developed by the late

Mostafa Fahim, professor of
medicine, that neuters dogs
without surgery was announced
in the May 23 edition of
Kiplinger.com. The
announcement also was
reported on the following
online news services: Business
Wire, Yahoo Finance and
Women's Financial Network.

Gabor Forgacs, professor of physics, was mentioned for his research to create vascular tissue in the May/June edition of *The Futurist*.

Cynthia Frisby, assistant professor of advertising, was featured in a May 14 article in the Cincinnati Enquirer on her research that demonstrated the positive effect of reality television on viewers. That research also was reported May 8 on the C-TV network in Canada.

Puncky Heppner, professor of educational and counseling psychology, was featured in a recent article in Kiplinger.com for his research on the impact of lymphedema on breast cancer survivors. That research also was reported in the May 20 edition of Cancer Weekly and the May 22 edition of Women's Health Weekly.

Lance Holbert, assistant professor of communication, was featured in a May 21 article in the

Pittsburgh Post-Gazette about his research that demonstrated that The West Wing television program changed viewers' political perceptions.

Rebecca Johnson, associate professor of nursing, was featured in an April 18 CNN story about her research on the beneficial effects of people interacting with pets.

Journalism faculty members
George Kennedy, Bonnie
Brennen and Stephanie Craft
were interviewed June 6 by
Metro News in St. Louis about
the scandal over fabricated and
plagiarized news articles in The
New York Times.

Julian Losanoff, research instructor in surgery, was featured in a June 16 article in HealthNewsDigest.com for his research on new methods for closing a patient's sternum following heart surgery.

Laurie Mintz, professor of educational and counseling psychology, was quoted in an article in the June 8 *Miami Herald* about her research on body image and fashion.

Steve Morris, senior research scientist at the MU Research Reactor, was featured in an April 29 article by United Press International about his research on the connection between skin cancer and arsenic in drinking water.

Randy Prather, professor of animal sciences, was mentioned in the June 16 issue of U.S. News & World Report for successfully cloning a "double knockout" pig. His research also was mentioned in the May 6 edition of National Hog Farmer.

Marily Rantz, professor of nursing, was featured in articles in the May 23 edition of McKnights Long-Term Care News and the March edition of Nursing Outlook for her research that found that more expensive nursing homes don't always provide better quality.

Robert Reys, professor of education, wrote an editorial about the recent federal education law, the "No Child Left Behind Act," that appeared in the April 6 Arkansas Democrat-Gazette.

Michael Roberts, professor of animal sciences, was mentioned in a June 16 article in the Cincinnati Post about his research demonstrating that manipulating the diet of female mice can influence the sex of their offspring. Roberts discussed the world's first cloned mule May 29 on National Public Radio's All Things Considered.

Sherod Santos, professor of English, was highlighted in an April 30 St. Louis Post-Dispatch article that described his new book, The Perishing, as some of the best new poetry in the Midwest.

Ken Sheldon, associate professor of psychological sciences, was quoted in an article in the May edition of Seventeen magazine about his research on personal happiness.

Shanna Swan, research professor of family and community medicine, was featured in June 18 articles about her research on the link between farm chemicals and sperm quality of men from mid-Missouri in following media outlets: the Associated Press, the Los Angeles Times,

New York Newsday, The Kansas City Star, the St. Louis Post-Dispatch, USA Today, Business Wire and HealthScoutNews.

Jack Tanner, associate professor of chemistry, was featured in an April 7 article in CNN Money about his research that demonstrated genetic mutations geneticists and psychiatrists believe are associated with schizophrenia.

Dan Vinson, associate professor of family and community medicine, was featured in articles in the June 5 edition of the Sydney (Australia) Morning Herald and June 12 in The

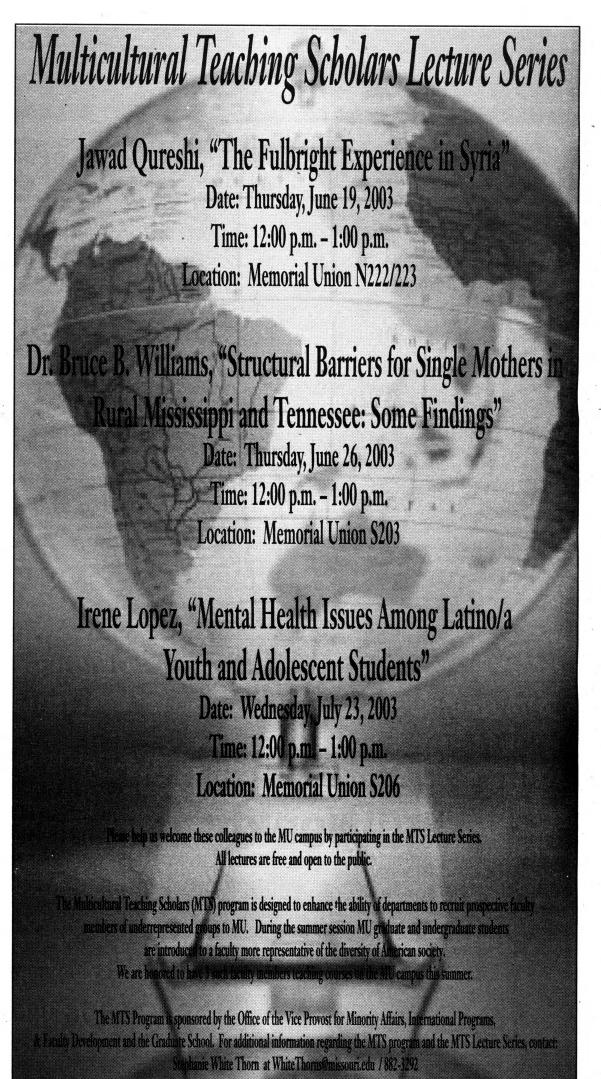
Kansas City Star about his research that found evidence that acute, short-term use of alcohol increases the risk of injury.

Fred vom Saal, professor of biological sciences, was interviewed as an expert on endocrine disruptors in an article in the May/June issue of American Scientist. His research demonstrating that bisphenol A, an additive in many plastics, causes abnormalities in the chromosomes of mice eggs was cited in United Press International articles on March 31 and April 1. That research

also was featured in the April 1 editions of the Seattle Times, the Los Angeles Times, the Cleveland Plain Dealer and Nature.

Sara Walker, professor of immunology and rheumatology, was featured in stories in the April 29
HealthNewsDigest.com and May 11 on CNNMoney about her research into a new drug treatment for lupus.

Ray Wood, professor emeritus of anthropology, was featured in an April 26 Associate Press article about his book on explorers who preceded the Lewis and Clark expedition.



### 'Dissolving the mind-brain barrier'

**OVERMEDICATED** 

Focus on drugs to treat less severe psychological problems concerns MU psychiatrist

ernard Beitman wants to create a new definition of psychotherapy. As the principal author of a new book on psychiatry training, Beitman, professor and chair of psychiatry at the School of Medicine, says psychiatrists must integrate therapeutic approaches that

traditionally have been dichotomous.

In the past few decades, curricula in psychiatric residency programs have focused predominantly on pharmacotherapy, therapy with medication, as the appropriate method to address not only serious mental illnesses but also less severe psychological problems, such as anxiety or mild to moderate depression.

As a physician, Beitman acknowledges the benefit of drugs, but in *Integrating* 

Psychotherapy and Pharmacotherapy: Dissolving the Mind-Brain Barrier, he argues that physicians have failed to integrate psychotherapy with medication as the best method to effectively treat patients.

"A depressed person describes symptoms to his doctor," says Beitman. "'My wife left me. I haven't seen my kids in months. I can't get along with my boss. I can't stop smoking. I drink too much.' The physician says, 'Here, take some Paxil."

This scenario indicates the

cultural complexity of this issue, Beitman says. For the most part, family-practice physicians mean well and sincerely want to help their patients, but these physicians simply do not always know when it is appropriate to refer patients to psychiatrists or how to describe psychotherapy. They also are constrained by the short, 15-minute visits that characterize modern practice.

Physicians aren't the only source of the problem. Beitman says patients expect pills to solve all medical and psychiatric problems. Since Prozac became available approximately 10 years ago, there has been a "destigmatization" of anti-anxiety or anti-depressant medications.

On one hand, this is good because society is beginning to recognize severe depression, schizophrenia and bipolar disorder as legitimate illnesses like cancer or Alzheimer's disease, Beitman says. On the other hand, the acceptance of anti-depressants allows patients to consume a pill that can numb their emotions and convince them that their problems do not require any work.



# MizzouWeekly

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