

Mizzou Weekly

Mapping Maize

Scientists harvest a bumper crop of genetic research. **Page 3**

Get the Lead Out

MU research helps environmental regulators target the most dangerous contamination sites. **Page 6**

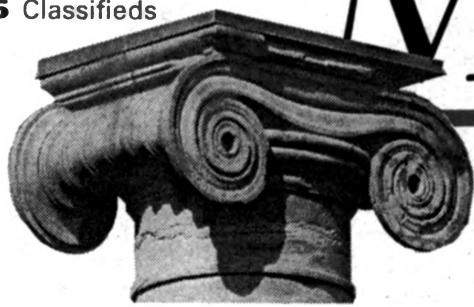
'Change of Colors'

National conference at MU explored impacts of Missouri's growing Hispanic population. **Page 2**

March 21, 2002

University of Missouri-Columbia

Spring has sprung, and Mizzou Weekly will be taking next week off. We publish again April 4.



Rob Hill photo

BRINGING DOWN THE HOUSE Cast members of MU's *Corps of Discovery: A Musical Journey* performed the campus debut Saturday under the direction of Pamela Legendre.

Mastering MU's future

MASTER PLAN Annual open forum invites comments from faculty, staff and students

Over the past decade, the MU campus has witnessed unprecedented growth. New buildings have been completed, and others are under construction or in the planning stages. But all that growth has not been haphazard: It is guided by the campus master plan.

Included in this issue of *Mizzou Weekly* is a special, four-page publication that provides a detailed update on the campus master plan. The master plan is intended to be a blueprint for MU's future, and is continually being developed and revised by the campus planning committee. The insert includes a campus map that highlights projects recently completed, projects in design or construction and projects in the planning stage.

An open forum on the master plan will be held at noon April 2 in the Reynolds Alumni Center Columns Rooms C and D.

Discovering a musical journey

The first act of *Corps of Discovery: A Musical Journey* made its long-awaited campus debut Saturday to the applause of a full house at Whitmore Recital Hall in the Fine Arts Building.

Those who didn't attend the performance might have quite a wait to experience this musical story about the Lewis and Clark expedition that was

commissioned by MU as a highlight of the campus celebration of the expedition's bicentennial. The world premiere of the dramatic musical work will be presented May 2, 3 and 4, 2003 at the Missouri Theatre in Columbia.

The cast of the production will be making a journey of its own this weekend. The first act will be presented March 23 at

a 5:30 p.m. twilight concert in the Weill Recital Hall of Carnegie Hall in New York City. From the Big Apple, the cast will travel to Washington, D.C. to perform March 26 on the Millennium Stage at the Kennedy Center.

Music lovers can check out the second performance through a live Internet broadcast from the Kennedy Center at 6 p.m.

Eastern time, March 26, on the center's Web site at www.Kennedy-center.org/millennium

As they got ready for the trip, the cast received some exhilarating news.

On Tuesday, MU senior Kory Bickel, who performs the role of John Potts, one of the four principal vocal roles in the production, won the national collegiate vocal championship from the Music Teachers National Association.

Curators will tackle budget challenges

SETTING A STRATEGY

Increased student fees and a package of cost-cutting measures will meet UM's fiscal shortfall

A deepening gloom that surrounds Missouri's state budget is forcing the UM System administration and the Board of Curators to address some of the key elements in the University's long-term financial strategy.

At a meeting that begins today on the UM-St. Louis campus, the curators will discuss a cost-cutting package that adds up to \$56.5 million for fiscal year 2003 — still not enough to cover a budget gap that is projected to reach \$66.7 million. To make up

that additional shortfall, the board will take up a recommendation to increase student educational fees by 8.4 percent next year. Other recommendations include eliminating planned spending for the fourth year of mission enhancement and the planned 4 percent salary pool for faculty and staff raises.

The revised planning assumptions anticipate a minimum cut of 10 percent in state appropriations next year for the UM System. The new planning document warns that, given the shortfall in state resources and a sluggish national economy, "The timeline for recovery of base funding is uncertain and a return to normal

growth rates is unpredictable at the current time."

It also cautions that in future budget years, withholdings of state appropriations above the traditional 3 percent required by law are possible in the short term.

The budget recommendations also point out some consequences of the proposed budget actions: "Not being able to increase faculty and staff salaries will cause the University to fall farther behind our peers in this area and make it even harder to attract and retain high quality instructors, researchers and support staff."

If the University is forced to defer filling some open positions, and eliminate other open

positions and adjunct faculty positions, the action could mean a decrease in class offerings and an increase in class size, the planning report says. It also could mean increased staff workloads and a reduction in student services and programming.

According to Gov. Bob Holden's spending recommendations for next fiscal year, the four-campus UM System is slated for a cut of a \$44.3 million — or 10 percent — in its core state budget. But, because of several factors, the budget gap next year is expected to widen to an estimated \$67.6 million.

That's because on top of the state budget cut, the UM System

will not receive the 2 percent increase in state funding that its earlier budget assumptions called for. In addition, inflation is expected to push up the University's expenses for equipment, utilities and other costs. With tight budgets, those purchases, as well as travel and other expenses, will be reduced or eliminated.

A package of cost-cutting measures curators will take up today would save an estimated \$56.5 million next year. In addition to eliminating salary increases and leaving positions vacant, other savings would come from:

- reduced funding for the UM Research Board
- deferring the faculty performance shares program
- reducing maintenance and

SEE Budget on Page 3

Willa Cather's World

Guest soprano Jane Dressler will perform the program *Willa Cather: Her World of Music* at 3 p.m. today, March 21 in Whitmore Recital Hall in the Fine Arts Building. The performance will include the song-cycle "My Antonia" which was originally written for Dressler by American composer Libby Larsen.

Dressler, a member of the Kent State University faculty, has distinguished herself as a performer of song and chamber music repertory throughout the United States and abroad. She will be accompanied by Linda Jones, a

Cleveland Institute of Music faculty member who has conducted and accompanied many well-known opera companies throughout the United States.

HELIX 2002

There's still time to register for the 2002 Higher Education Teaching and Learning eXchange (HELIX) conference to be held April 24-25, 2002 at Tan Tar A. The HELIX conference is designed to bring together those faculty, administrators, library and technical personnel from higher education involved with

supporting instruction and applying technology to the teaching and learning process.

This year's conference keynote speaker, Kathy Christoph from the University of Wisconsin will present, "Targeting the Transformation of Teaching and Learning Through Technology." The registration deadline is April 12. For conference and registration information, visit <http://www.more.net/projects/members/helix2002/>

Start your engines

Even suburban sodbusters know that you need the right

tool for the right job, and that it's important to keep those tools in tiptop shape. So, if the grass in your yard has started poking up through leaves you should have raked up last fall, don't despair. A group of MU students is ready, willing and more than able to get your lawn mower and tiller ready for another year of backyard battle.

Members of the Mizzou Agricultural Systems Management Club will be holding their annual spring lawn mower and tiller tune-up clinic beginning April 4. Club members will steam clean the mower, replace the spark plug,

change the oil, sharpen and balance the blade, and clean the air filter all for \$30. The proceeds support club activities.

Lawn mowers can be dropped off from 4 to 6 p.m. April 4 or from 7 to 9 a.m. and 4 to 6 p.m. April 5 on the east side of the Agricultural Engineering Building. Over the weekend, club members will get your mowers humming and ready for pick up on April 8 and 9. All machines must be in working order; riding mowers can't be accommodated. With questions, call Sandy at 882-2731.

Uniting on issues of immigration

CHANGE OF COLORS

University hosts national conference to explore the changing face of Missouri's Hispanic population

The trickle of Latino immigration in Missouri turned into a torrent during the 1990s, largely attributable to the opening of meat-processing facilities in several parts of the state, said speakers at a national conference at the University of Missouri.

The Cambio de Colores (Change of Colors) conference at the Reynolds Alumni Center commenced last Wednesday with remarks by University and state

officials. "We spend a lot of time in Jefferson City pitting rural against urban," Claire McCaskill, Missouri state auditor, told the crowd of about 300. "This is an opportunity to unite with these issues of immigration that affect all of us."

Immigration in the 1990s doubled the state's Hispanic population to nearly 120,000, MU rural sociologist Daryl Hobbs observed. Although three-fourths of Missouri Latinos still live in and around St. Louis and Kansas City, the Hispanic population "increased at a greater rate in rural Missouri than it did in the urban areas," he said.

Almost all the counties that

showed the greatest increase were also the sites of meat- or poultry-processing facilities, he said. "We can conclude the Hispanic population came to Missouri to work."

The Hispanic population "is clearly younger" than the general population, he added. More than one in five Missourians are older than 55, while fewer than one in 10 Latinos in Missouri have reached that age.

The relative youth of Hispanic immigrants translates to a higher birthrate, said Lourdes Gouveia, director of Chicano/Latina Studies at the University of Nebraska. The Latino populations in some Nebraska towns increased by more than 1,000 percent in the '90s, she noted, and "The fertility rates are extremely high."

"Those born in the United States have no other place to call

home," she said. "The states have been slow to recognize this. When people talk and write about rural populations, they continue to act as if this wasn't there."

The demographic shift no longer can be denied, said Christina Vasquez Case, an MU graduate student of agricultural economics who has studied Hispanic immigration in five central Missouri communities: Marshall, California, Sedalia, Jefferson City and Columbia. The first three cities on the list, the sites of agricultural or meat processing plants, experienced Hispanic population increases of 400 percent or more during the 1990s, she said.

In four of those towns, most of the Hispanics came originally from Mexico. In Marshall, El Salvadorans make up the largest immigrant population, accounting for nearly half of the city's Latinos.


Vasquez Case's data also

indicated that most of the newcomers had lived elsewhere in the United States before they moved to Missouri. "And why did they come here?" she said. "To work!"

Gouveia agreed, saying immigrants have suffered from "an image of invasion" that is discriminatory and factually incorrect. "Historically, immigrants have been responding to a persistently high demand for labor, with active involvement and recruitment by government and corporations," she said.

Ron Turner, UM System executive vice president and director of cooperative extension, said the recent arrivals will challenge the University "to focus its resources on the highest priorities at the local level." Last year, University Outreach and Extension established the Alianza (alliances) project to identify needs and coordinate resources to serve Missouri's Latino immigrant populations, he said.

The conference was conceived and led by the Hispanic and Latin American Faculty & Staff Association at MU.



Parking & Transportation Services
Turner Avenue Garage
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882-4568

All parking lots will be enforced during SPRING BREAK and shuttle service will be suspended. Students needing access to core campus areas during the week of spring break may purchase temporary permits from the Parking and Transportation Office, Turner Avenue Garage, Level 2.

web.missouri.edu/~mubs/parking/parking.html

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MizzouWeekly

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Bumper crop of data

MAPPING MAIZE Plant scientists worldwide now have a new resource they can use for gene discovery

For members of the Maize Mapping Project, the proverbial harvest time has arrived. After almost four years of research to create an integrated Maize Genome map, the MU researchers unveiled the first fruits of their labor this past weekend to more than 400 scientists at the 2002 Maize Genetics Conference in Orlando, Fla.

"When we began, our goal was to develop a map that fully integrated the genetic and physical maps for each of the 10 chromosomes of maize," said Karen Cone, associate project director and associate professor of biological sciences. Plant scientists worldwide now have a new resource they can use for gene discovery, studies of gene functions and comparative genomics.

"The map will allow us to learn more about the genome and ultimately will benefit all basic plant research, the corn industry and the consuming public. Future benefits of this research include increased crop yields, reduced use of chemical fertilizers, herbicides and pesticides, and better quality food."

Cone likened the creation of the integrated map to piecing together a jigsaw puzzle. The genetic map component is

analogous to the puzzle's edge pieces. Using these pieces, the puzzle's frame is constructed, which gives a foundation for the interior pieces, which are analogous to the physical map component. The end result is a completed picture of the maize genome.

"The value of this integrated map is that the position of a gene or genetic trait on the genetic map can be cross-referenced immediately to its corresponding location on the physical map and vice versa," Cone said.

"For example, if a plant breeder has localized a disease-resistance trait to a region on the genetic map, they need only cross-reference to the physical map to find its approximate location at the DNA level. In addition, this resource will provide for much greater efficiency in mapping and identifying the 30,000 to 50,000 genes of maize."

The National Science Foundation funded the Maize Mapping Project with a five-year, \$11 million grant in 1998, one of the first grants NSF awarded through a competitive program on plant genomics related to economically important crops. The project - which is a collaboration among researchers at MU's agronomy and biological sciences departments, Clemson University and the University of Georgia - is on schedule to be completed in the fall of 2003.

The integrated map can be accessed at www.maizemap.org.

BUDGET from Page 1 repair expenditures from 1.5 percent to 1.25 percent of a building's replacement value

The 8.4 percent student fee increase would generate \$11.1 million - enough to close the estimated gap now. But the budget recommendations also warn: "In the event the state's cut to the core budget increases beyond the level specified by the governor, the University would need to retain the flexibility to increase student fees further."

With this session of the

General Assembly only at its halfway point, some legislators are questioning whether state appropriations will have to be trimmed even more to balance next year's budget.

On a positive note, the House Budget Committee on Monday held to the governor's recommendation that cuts to higher education institutions remain at 10 percent next year. But some budget experts still expect grimmer financial news before the end of the legislative session.



VICE PROVOST FOR RESEARCH UNIVERSITY OF MISSOURI - COLUMBIA

The University of Missouri - Columbia is seeking a scholar and administrator of national prominence for the position of Vice Provost for Research. The position reports to the Provost and is responsible for leadership and administration of research and technology development. The leadership of the Vice Provost will help establish a system of infrastructure and incentives that will enable faculty to achieve eminence in their research and scholarly goals. Responsibilities include: 1) administration of the Division of Sponsored Programs; 2) creation of programs to generate increased funding and to diversify sources of funding; 3) implementation of a strategic plan that enables the University to excel in identified areas of current or emerging research strength; 4) representing MU's research initiatives at national institutes and foundations; 5) oversight of seven research centers with over 350 staff; 6) administration of the University's responsibilities for compliance with Federal regulations on human subject and animal research; and 7) oversight and coordination of the four-campus UM Technology Transfer Program.

The successful candidate will have an earned doctorate. In addition to an exemplary record of research, the person will have proven experience with national, state and private funding sources. Proven administrative and budgetary experience at or commensurate with departmental chair level or above, good interpersonal skills, and a commitment to collegial, creative leadership in a highly diverse university system are expected.

The University of Missouri - Columbia was established in 1839 as the first public university west of the Mississippi River. It is the flagship of four campuses of the University of Missouri System and is one of the five most comprehensive and diverse universities in the United States. A research extensive institution, MU is a land-grant university and a member of AAU. It offers baccalaureate, masters and doctoral degree programs. With a thriving campus of approximately 24,000 students and faculty dedicated to excellence in teaching and research, MU is situated in the attractive community of Columbia, nationally ranked as one of the five most livable cities in the United States. New Federal awards have increased by 132% in the past four years (the fastest growth among AAU public universities), royalties and patent applications have doubled in the past year, and a technology business incubator is in the final planning stages. In the humanities, MU holds a large number of national awards and fellowships from public and private agencies.

Nominations and applications are welcome. Applications should include a detailed Curriculum Vitae, addresses and telephone numbers of three references, and a two- to three-page personal statement of the applicant's research leadership philosophy. Active review of applications and nominations will begin March 25, 2002. The search will continue until the position is filled. Direct nominations and applications to:

Vice Provost for Research Search Committee
Office of the Provost
University of Missouri - Columbia
114 Jesse Hall
Columbia, MO 65211

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A PUBLIC HEARING

The Master Plan

Tuesday, April 2
Noon to 1 p.m.

Columns D & E, Reynolds Alumni Center

You're invited to a presentation on the Campus Master Plan. MU's Master Planner Perry Chapman, a principal with Sasaki & Associates, Boston, has helped develop siting studies, program studies, project reviews and campus master plans for nearly 60 colleges, universities and other nonprofit institutions.

You're encouraged to offer comments and suggestions during the question-and-answer period. Check out the MU Campus Master Plan 2002 in today's issue, and help map out Mizzou's future.



**Pick up the phone and
call Brian Budzinski
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the next issue of the
Mizzou Weekly**

calendar



Concerts & Plays

Thursday, March 21

GUEST RECITAL: Soprano Jane Dressler will perform at 3 p.m. in Whitmore Recital Hall as a part of Women's History Month.

STUDENT RECITAL: The University Philharmonic Orchestra will perform at 8 p.m. in Jesse Auditorium. Cost: \$5 for adults, free for students.

Tuesday, April 2

UNIVERSITY CONCERT SERIES: Neil Simon's *Plaza Suite*, starring Lee Meriwether, will be performed at 7 p.m. in Jesse Auditorium. For ticket information, call 882-3781.

Wednesday, April 3

STUDENT RECITAL: Elinor Freer will perform on piano at 8 p.m. in Whitmore Recital Hall.

Courses & Workshops

Thursday, March 28

ACCOUNTING SERVICES WORKSHOP: "Travel Preparation and Reimbursement" will be presented from 9 a.m.-noon today, April 25 and May 23. Prerequisite: "MoCodes and Chartfields." For enrollment

and location, use the MU Training registration web site: <http://iats.missouri.edu/servlets/ASPRRegTraining>.

Saturday, March 30

MUSEUM EDUCATION WORKSHOP: A three-day landscape workshop for children in grades 7, 8 and 9 will be held today and April 6 and 13 from 1-3 p.m. at the Museum of Art and Archaeology in Pickard Hall. Register by March 22. Cost: \$20 for members, \$30 for non-members.

Tuesday, April 2

HUMAN RESOURCES WORKSHOP: "Adult Learners" will be presented from 11:30 a.m.-1 p.m. in S207 Memorial Union. Registration is required. Call 882-2603.

HUMAN RESOURCES WORKSHOP: "Preparing for Retirement" will be presented from 7-9 p.m. today, April 9, 16 and 23 in 110 Lee Hills Hall. Registration is required. Call 882-2603.

Wednesday, April 3

NEW EMPLOYEE ORIENTATION: This orientation is open to all new MU staff from 1:30-5 p.m. in N222/223 Memorial Union. These orientations will be held

throughout the semester on the first and third Wednesday of each month at various times and locations; registration is not required.

MU BOTANIC GARDEN WORKSHOP: David Massey, landscape gardener with Landscape Services, will present "Flowering Shrubs in Mid-Missouri" from 6:30 - 9:30 p.m. in S206 Memorial Student Union. Cost: \$8 for MU Botanic Garden members, \$10 for non-members. For more information, contact Marilyn Love at 882-4240.

Thursday, April 4

EMPLOYEE ASSISTANCE WORKSHOP: "Exploring Career Options" will be presented today, April 4, and 11 from 5:30 - 8:30 p.m. Participants will be required to complete two career assessment inventories in advance of the workshop. Cost: \$20. For details, call 882-6701.

Exhibits

BRADY COMMONS GALLERY:

"Women in the Arts," an exhibit of works in a variety of media by women artists from around Missouri, will be on display through April 4. The gallery, located on the second floor of Brady Commons, is open 10 a.m.-5 p.m. weekdays, 10:30 a.m.-4 p.m. Saturday, and 1:30-5:30 p.m. Sunday.

BINGHAM GALLERY: "Annual Graduating Senior Show," an

exhibition of works in a wide range of media by graduating seniors, will be on display through April 5. Bingham Gallery, located in the Fine Arts Building, is open 8 a.m.-5 p.m. Monday - Friday.

MUSEUM OF ART & ARCHAEOLOGY:

"The Legacy of the Harlem Renaissance: Influences and Inspirations" will be on display through March 31. "Newspaper Lithographs by Honore Daumier: Social Satire in the Nineteenth Century" will be on display through May 26. "Picturing Nature: A Cross-Cultural View of Landscape" will be on display through July 7.

"Tradition and Change: Art from Oceania" will be on display into 2003.

The museum, located in Pickard Hall, is open from 9 a.m.-5 p.m. Tuesday-Friday, 6-9 p.m. Thursday and noon-5 p.m. Saturday and Sunday.

STATE HISTORICAL SOCIETY:

"To War with Pen and Brush: Artists Respond to World War II" is on display in the main gallery through March 22. The gallery is open from 8:30 a.m.-4 p.m. Monday-Friday. "Tracing His Journeys," drawings by Duane Evans Lyon, is on display in the north-south corridor. "The Cuban Missile Crisis, October 1962," comprised of editorial cartoons from around the world, is on display through the semester.

The corridors are open from 8 a.m.-4:30 p.m. Monday-Friday and 9 a.m.-4:30 p.m. Saturday. Thursday and noon-5 p.m. Saturday and Sunday.

UNIVERSITY ARCHIVES:

The University Archives offer a number of online exhibits that document the history of MU. The most recent exhibit is "Mizzou on Canvas, A Portrait in Leadership," which features portraits of former University officials. Links to the archives' exhibits are located at www.system.missouri.edu/archives/exhibitlist.html.

Lectures & Seminars

Thursday, March 21

MOLECULAR MICROBIOLOGY SEMINAR: Marshall Bloom from Rocky Mountain Labs in Hamilton, Mont., will present "Mink Coats and Mink Genes: Structure-Function Relationships of the Aleutian Mink Disease Parvovirus" at 1 p.m. in M437 Medical Sciences Building.

NUTRITIONAL SCIENCES SEMINAR: Bernhard Hennig from the University of Kentucky will present "Zinc and Endothelial Cell Metabolism: Implications in Atherosclerosis" at 4 p.m. in 209 Gwynn Hall.

MUSEUM LECTURE: Renee Ater, assistant professor of American art at the University of Maryland, will present "African-American Women Sculptors of the Harlem Renaissance" at 5:30 p.m. in 106 Pickard Hall. A public reception will be at 5 p.m.

Monday, March 25

CARDIOVASCULAR RESEARCH SEMINAR:

Randall Prather, professor of animal sciences, will present "Transgenic Pigs for Biomedicine and Agriculture" at noon in 133 Dalton Cardiovascular Research Center, 134 Research Park Drive.

SOIL SCIENCE SEMINAR: Bouzid Nasraoui, a visiting Fulbright scholar and plant pathologist from Ecole Supeureur d'Agriculture du Kef in Tunisia, will present "Biological Control Using Bacteria Against the Wheat Fungal Disease 'Take-All'" at 4 p.m. in 123 Natural Resources Building.

Monday, April 1

SOIL SCIENCE SEMINAR: Kee Choon Park, a graduate student in soil science, will present "Biological Weed Control with Deleterious Rhizobacteria" at 4 p.m. in 123 Natural Resources Building.

Tuesday, April 2

HEALTH INFORMATICS SEMINAR: Suzan Holt, a postdoctoral associate in biological sciences, will present "A SAGE Tale about Energy Metabolism in the Free-Living Nematode, *Caenorhabditis elegans*" at noon in 426A Clark Hall.

BIOLOGICAL SCIENCES SEMINAR: Rick McGee from the Mayo Clinic will present "Improving the Effectiveness of Student Selection Processes—Using Qualitative Research Methods to Define and Select for Key Characteristics of MD, PhD and MD/PhD Students" at 3:30 p.m. in 18 Tucker Hall.

Wednesday, April 3

GRADUATE ISSUES SEMINAR: Tom Dougherty, professor and chair of management, will present "Qualities of a Successful Mentoring Relationship" at a brown-bag seminar and discussion session from noon -1:30 p.m. in N208 Memorial Union.

Thursday, April 4

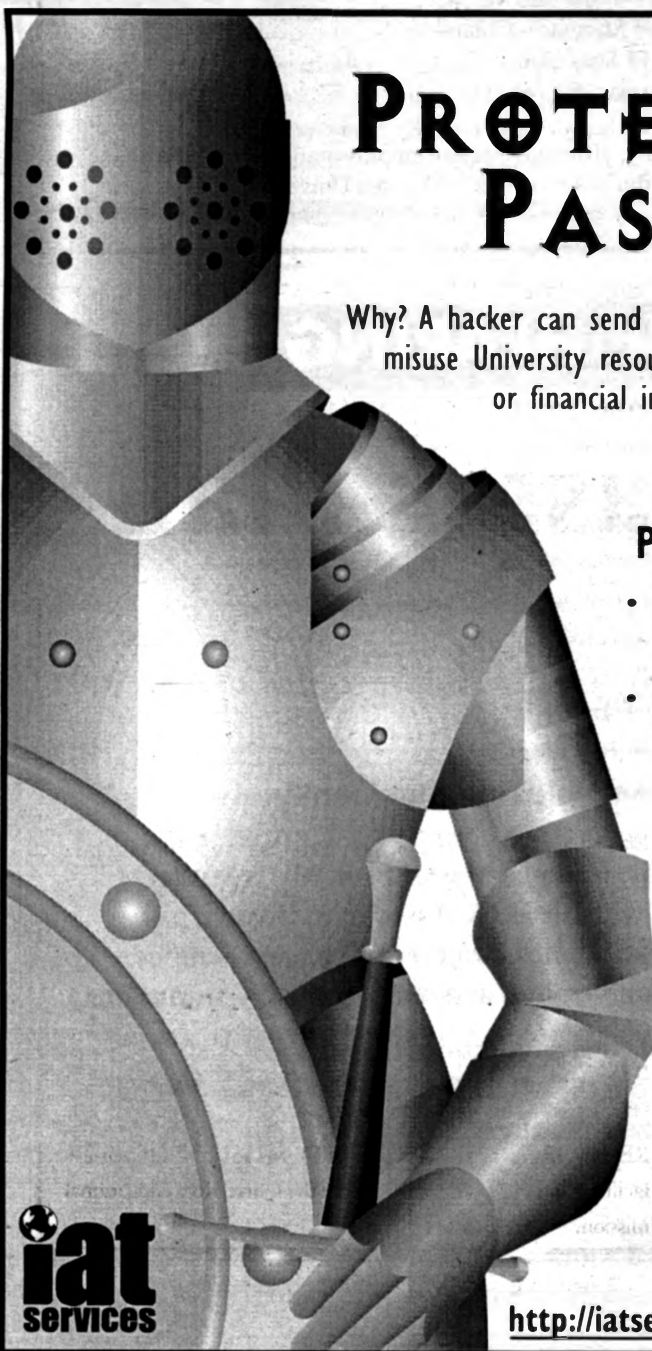
CHEMICAL ENGINEERING LECTURE: James Lee from Ohio State University will present "Micro-/Nano-Processing of Polymeric Materials for BioMEMS Applications" at 3:30 p.m. in Ketcham Auditorium in the Engineering Building East. A reception will be held at 3:00 p.m.

NEUROSCIENCE SEMINAR: Albert Feng from the University of Illinois will present "Hearing in a Cocktail Party: Perspective from Neurobiology to Technology" at 3:30 p.m. in 18 Tucker Hall.

Special Events

Thursday, April 4

LIFE SCIENCES OPPORTUNITIES FAIR: This life sciences undergraduate career and graduate program fair will be held from 10 a.m. - 2 p.m. in N214/215 Memorial Union. For more details, contact Amanda Nell at 882-0878.




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MU CAMPUS MASTER PLAN 2002



The University of Missouri-Columbia's Campus Master Plan is an ongoing process begun in 1980 to create optimal efficiency and aesthetic appeal in the use of campus buildings and land. A campus planning committee includes faculty, staff and students who advise the vice chancellor for Administrative Services on campus planning issues.

Since its inception, more than 50 public hearings on the plan have been held for the campus and the community. Hearings include status reports on space needs and specific projects, with accompanying visual presentations and graphics. Progress reports are presented annually in open meetings on campus.

Comments and responses that help to shape the plan are always encouraged. An open forum this year will be held at noon, April 2, in the Reynolds Alumni Center.

A central concept of the master plan is to build on the tradition of the MU campus to create a unified, efficient environment that is inviting to students and conducive to teaching, research and support services. Enhancing this tradition is the Chancellor's designation of the campus as a Botanic Garden, which extends MU's magnificent flora environment as a learning resource for the public at large. The plan also fosters strengthening cooperation between the campus and neighboring Columbia.

"As we enter the 21st century, there is an essential theme that we need to incorporate into our planning

and design ideas for the campus," said Perry Chapman, MU's master planning consultant. "That theme is 'connection.' Connection is the hallmark of great campuses. It is the creation of spaces that induce people to gather and interact in a collegial way. It is the linkage of open spaces that works to unify the campus fabric. Academic, residential and social functions are tied together by inviting pedestrian passages that enhance campus vitality and intellectual exchange."

Objectives of the plan (see box at right) are intended to help test planning and design concepts and proposals, and specific projects as they are developed. Objectives are consistent with the Board of Curator's 1981 policy statement, which also includes the goal of "maintaining and making more efficient and attractive the university's physical plant."

The master plan's objectives have helped to shape projects that have been completed and others that are under way. A project is of interest in that, as a part of the whole, it complements and reinforces existing and planned projects. With the plan as a guide, campus improvements should blend with their surroundings so as to appear to have been there from the start.

Accomplishments to date and upcoming planned objectives are shown on the inside map.

Feel free to use this supplement to comment on the plan. Simply write wherever space is available and return to Ruth Tofle, chair, Campus Planning Committee, 137 Stanley Hall. Readers' comments are encouraged.



Francis Quadrangle, with its Columns and domed Jesse Hall, remains the traditional heart of MU and the focal point of an expanding campus.



PLANNING PRINCIPLES

PRIDE OF THE STATE: Express visually the functional importance of the campus to the state, nation and world.

UNIFIED TOTAL CAMPUS: Unify the campus while clarifying and revealing its dominant components.

DIVERSITY WITHIN THE UNITY: Create and maintain campus settings that bring together the diversity of people, heritages and culture.

STRONG 'SENSE OF PLACE': Make the campus a distinctive and memorable place for all members of the University community and for the citizens of Missouri.

RESPECT ARCHITECTURAL INHERITANCE: Design buildings to respect the scale, materials and textures embodied in the historic architecture of the campus.

RESPOND TO CLIMATE AND ENVIRONMENT: Design buildings and landscapes to be compatible with the regional environment and to conserve natural resources.

RECRUITMENT-RETENTION AID: Stress the environmental qualities of the campus that help attract and hold students, faculty and staff.

FUNCTIONAL ADEQUACY: Provide appropriate and adequate facilities — neither constrained nor lavish — for campus activities.

ENHANCE QUALITIES OF CLOSENESS: Locate campus functions in close proximity to enhance learning, research and social interaction.

ALLOW FOR PRUDENT EXPANSION OF CAMPUS FUNCTIONS: Provide for facilities expansion in ways that effectively utilize limited land resources.

PEDESTRIAN DOMINANCE: Maintain a pedestrian-dominant campus.

RECOGNIZE VEHICLES: Recognize and gracefully accommodate the need for vehicles on campus without interfering with the pedestrian nature of the campus.

RESPOND TO ACCESSIBILITY NEEDS: Continue the tradition of providing persons with disabilities an optimal access to the campus.

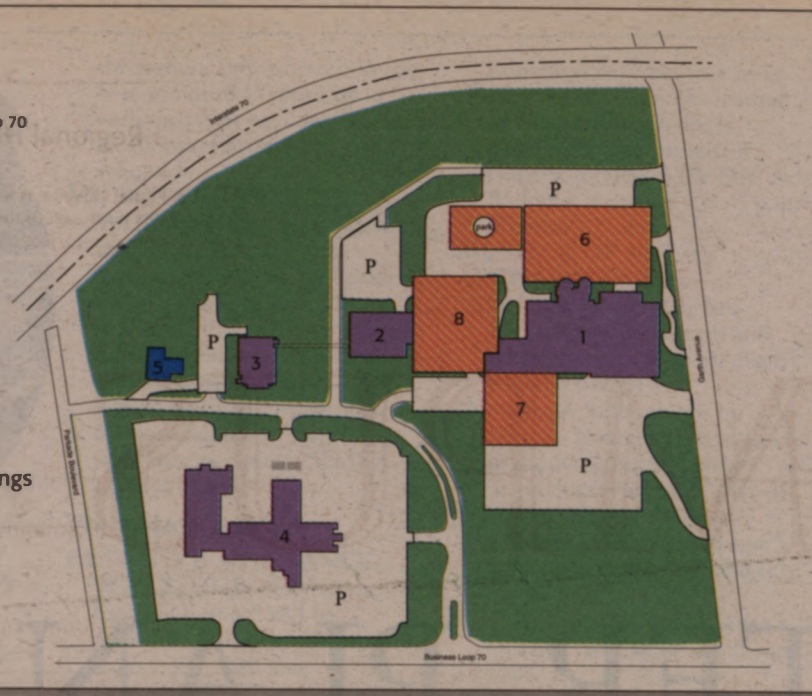
RESPECT NEIGHBORS: Cooperate in achieving mutually beneficial campus and civic objectives.

REINFORCE THE UNIVERSITY MISSION: Organize facilities and places so as to reinforce the University's educational mission.

Ellis Fischel Campus

Ellis Fischel campus is located about two miles northwest of the main campus on Business Loop 70 at Garth Avenue.

- 1 Ellis Fischel Cancer Center
- 2 Green Building
- 3 Allton Building
- 4 Health South-Rusk Rehabilitation Center
- 5 Ellis Fischel Guest House
- 6 Ellis Fischel Hospital Expansion/Replacement
- 7 Outpatient Clinics Expansion
- 8 Possible Future Research Buildings

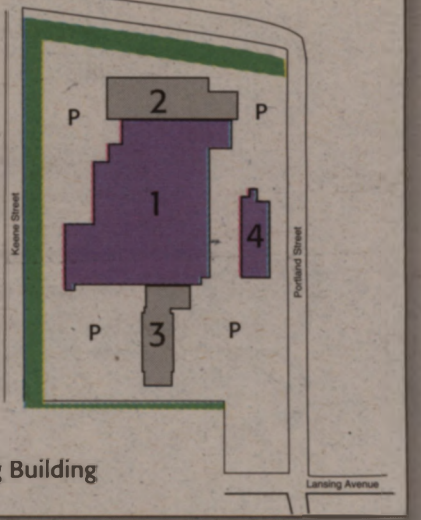


Existing Buildings

- A Jesse Hall
- B Hearnes Center
- C Ellis Library
- D Memorial Union
- E Brady Commons
- F Research Reactor
- G Heinkel Building
- H Agriculture Building
- J Clydesdale Hall
- K Student Recreation Center
- L Reynolds Alumni Center

Columbia Regional Hospital

Columbia Regional Hospital is located about four miles northeast of the main campus on Keene Street, just off Hwy. 63



- 1—Columbia Regional Hospital
- 2—Keene Medical Building
- 3—Health Pavilion
- 4—Columbia Regional Engineering Building

Projects Recently Completed

- 1 Cornell Hall
- 2 Student Success Center
- 3 Virginia Avenue Parking Structure
- 4 Power Plant Capacity Addition
- 5 Green Tennis Center at Mizzou
- 6 Emergency Room Expansion

Botanic Garden Projects

- 7 Hydrangea Collection
- 8 Jefferson Garden

Projects in Design or Construction

- 9 Basketball Arena
- 10 Life Sciences Center
- 11 McKee Addition/Renovation
- 12 Student Recreation Center Expansion
- 13 Providence Road Pedestrian Overpass
- 14 Virginia Avenue Residence Halls & Dining Facility
- 15 Dalton Research Center Expansion/Renovation

Botanic Garden Projects

- 16 Daylily Garden
- 17 Ericaceous Garden
- 18 Hosta Collection
- 19 Container Garden at South Jesse Plaza
- 20 Tiger Plaza

Projects in the Planning Stage

- 21 Engineering Building East Addition/Renovation
- 22 Ellis Library Addition/Renovation
- 23 Missouri Technology Park
- 24 Pedestrian Plaza/Mall
- 25 Veterinary Medicine Guest House
- 26 Second Phase-Residence Halls
- 27 Pickard & Sociology Halls Expansion/Renovation
- 28 Medical Research Facility
- 29 Visitors Center
- 30 Performing Arts Center
- 31 Child Development Center
- 32 College Avenue Pedestrian Overpass

Botanic Garden Projects

- 33 McAlester Arboretum

University Land, largely pedestrian but including service drives and small parking areas

Existing MU buildings

Possible future structures

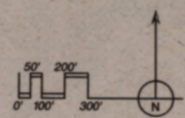
P Parking

Parking Garages

Major walks*

Major bikeways*

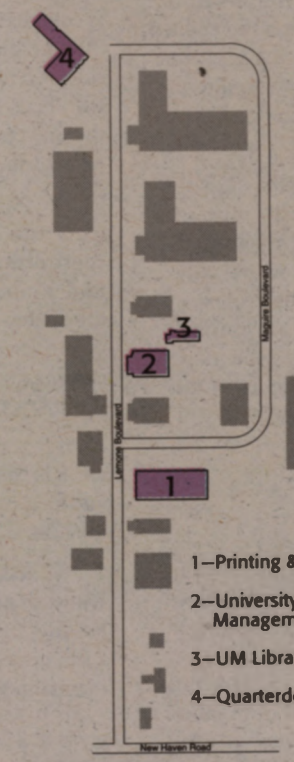
*Note: Many walkways and bikeways are shown straight for diagrammatic clarity; in actuality many will be curved and shaped to topography, planting and buildings.



DRAFT 4.1.02

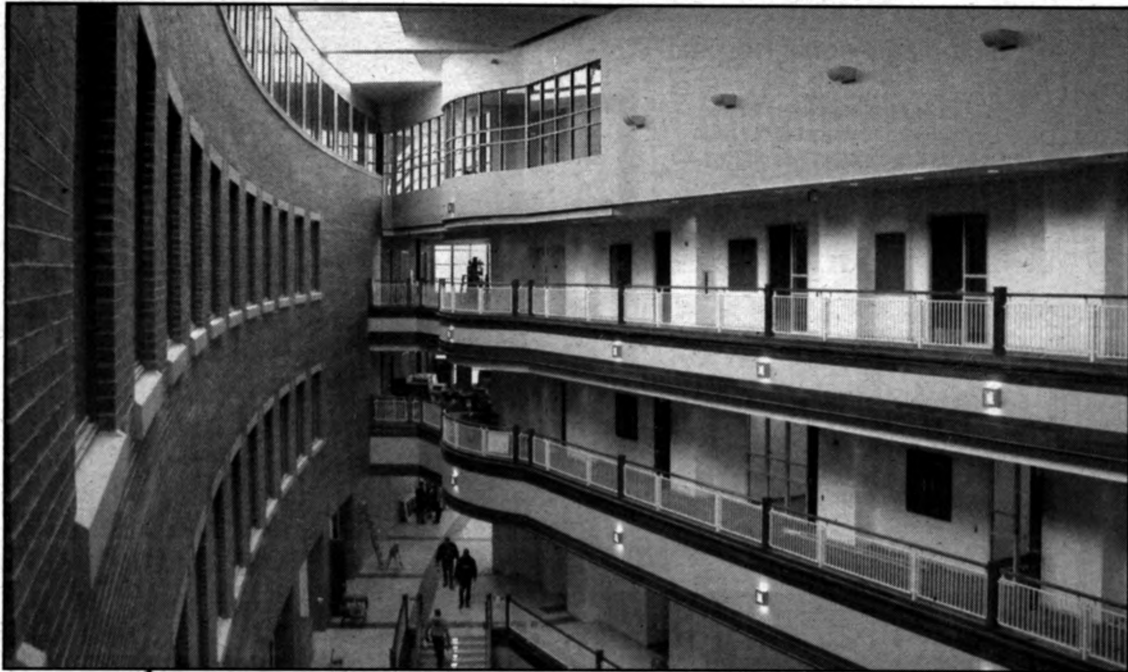
Comments and questions should be sent to the Campus Planning Committee, 137 Stanley Hall. Revised edition scheduled for March 2003. For more information, see the MU Master Plan website at <http://www.ct.missouri.edu/masterplan/masterplan.htm>

Lemone Industrial Park



- 1—Printing & Publication Facility
- 2—University Press & Records Management
- 3—UM Libraries Depository
- 4—Quarterdeck Building

ACADEMIC CONSOLIDATION



Cornell Hall's inviting, five-story atrium will be surrounded by College of Business classrooms, lecture halls, offices and conference rooms. The building features state-of-the-art technology, including wireless Internet access and two-way video conferencing.

College of Business departments will regroup in Cornell Hall

Decanting... recaptured space... surge chains... adaptive reuse... are all planning terms used by MU's master planner, Perry Chapman, to describe the phenomena of academic consolidation taking place across the MU campus as new buildings go up and older facilities are reassigned.

These terms describe not only the addition of new classroom, research and office space, but also the reclamation and enhancement of academic teaching and research vitality.

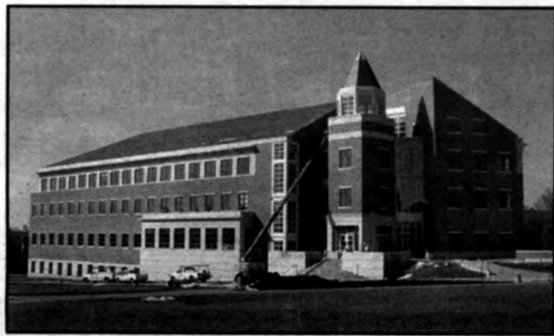
In the past, many universities — including MU — dealt with growth by creatively filling in established facilities, even if it meant scattering departments. Faculty often were separated from where they taught and conducted research, a discouraging prospect by any academic's standards.

The current trend of academic consolidation regroups core staff and resources in new structures at one end of a "surge chain," while space is freed up at the other end for other campus functions in the vacated facilities.

"In this context, MU is ahead of the national trend," said Chapman, principal with the prominent firm of Sasaki Associates, Inc., of Boston. "In the most stable of periods, the historic growth of space on American campuses is at least 1 percent per annum. But some 30 percent of the present MU campus space has been added this last decade, creating a reservoir of existing space that is being recaptured as its occupants vacate to go into the new buildings. MU is addressing its teaching and research vitality and regrouping academically quite well."

Chapman, whose master-plan clients include Ohio State, Cornell, Vanderbilt, Auburn, and many other universities, says that in terms of academic vitality and collegiality, this regrouping trend counters several decades of ad hoc space moves by the nation's colleges and universities. University administrators are learning that growth means more than simply getting the most out of existing, or the addition of new, space. It means consolidation, inspiration and the revitalization of academic effort.

The opening of Cornell Hall will soon create a new "surge chain" and "decanting" on the MU campus. The week of May 20 will see the consolidation of the College of Business' academic units, graduate students, support staff and resource personnel and agencies in the building. Some 125 people will make the move, including 90 to 95 faculty and support staff in the departments of Accountancy, Finance and Management and Marketing in Middlebush Hall; technical support staff from offices in the Professional Building; doctoral students, TAs and RAs from McReynolds Hall; and personnel of the



The College of Business will gather its departments under one roof after the winter semester closes in May. Classes in Cornell Hall will begin this summer.

Missouri Training Institute and the federally funded Small Business Development Center from leased space at University Place.

"We're looking forward to new digs," said management professor Art Jago, who will be coordinating the move. "We'll finally all be in the same building. It'll be really good to be grouped in Cornell and interact as a college."

The McKee Hall renovation-and-expansion project, though not yet funded, will create a similar shift when it is completed. The State Historical Society will move into the building from its present location on the east side of Ellis Library, thus freeing up valuable space for the library's expansion. Other shifts should occur with the university's purchase of Columbia Regional Hospital, and the opening of the Life Sciences Center in 2004.

As with all space assignments, whether through new construction or the readaptive use of older facilities, the idea is more than simply larger classrooms, roomier offices and better-equipped labs. The vitality of academic research and teaching at MU is enhanced when existing and new space resources are organized for flexibility, interaction and creativity.

Professor and chair of environmental design, and chair of the Campus Planning Committee, Ruth Tofle, says that planning principles stress environmental qualities that attract and hold students, faculty and staff.

"We want to organize facilities to reinforce the University mission and strive constantly to have our facilities match pedagogical styles and use of technology. I feel privileged to be witnessing our expansion while maintaining these goals," she said.

CAMPUS PLANNING COMMITTEE

The Campus Planning Committee advises the vice chancellor for Administrative Services on the facility needs of the campus. Members for 2001-2002 are:

CHAIR

Ruth Tofle, professor and chair of environmental design

FACULTY

William Bondeson, professor of philosophy

Richard Hardy, associate professor of political science

Randy Miles, associate professor of soil and atmospheric sciences

R. Speer Morgan, professor of English

Carol Ward, associate professor of anthropology

STAFF

Charles Johnston, senior architect

Jamie Melchert, circulation manager

STUDENTS

Brett Huhman, student

Theresa Wieberg, student

Rebecca Ory-Hernandez, graduate student

EX-OFFICIO

Donald Guckert, director of Planning, Design & Construction

Jim Joy, director of Parking and Transportation

Chris Koukola, assistant to the chancellor for University Affairs

Arthur Merrick, MU Retirees Association representative

Frankie Minor, director of Residential Life

Pat Morton, director of Institutional Research

Osmund Overby, professor emeritus

George Preckshot, professor emeritus

Robert A. Simmons, architect, University System

Alan R. Warden, assistant vice chancellor-Facilities

Sarah Colby Weaver, director of Disability Services

CAPITAL REVIEW COMMITTEE

The Capital Review Committee is charged with providing advice to the provost and vice chancellor for Administrative Services, as appropriate, on campus-level issues regarding the use of existing space, maintenance and repair of existing space, priorities for renovation of existing space, and priorities for adding new space. Members are:

CO-CHAIRS

Brady Deaton, Provost

Kee W. Groshong, vice chancellor for Administrative Services

MEMBERS

Mark Bresnahan, MSA President

James Bunton, assistant vice chancellor Business Services

David Housh, vice chancellor for Development and Alumni Relations

Chris Koukola, assistant to the chancellor for University Affairs

Michael Middleton, deputy chancellor

Michael Nolan, professor of rural sociology

Benyamin Schwarz, associate professor of environmental design

Cathy Scroggs, interim vice chancellor for Student Affairs

Scott Shader, assistant director of Space Planning & Management

Gary Smith, director emeritus

Robert Smith, Staff Advisory Council representative

Bruce Walker, dean of the College of Business

Alan R. Warden, assistant vice chancellor-Facilities

Historical drawing, page one, reprinted with permission of University of Missouri Archives

Aerial view of campus, page one, reprinted with permission of MU Publications and Alumni Communication

Publication created and designed by Campus Facilities Communications

Workplace culture clash

CONFLICTING VALUES

Organization's style can have big impacts on employees

Can a "free thinker" peacefully exist in a "yes-man" organization?

An MU business professor set out to find answers to just that. Chris Robert and S. Arzu Wasti of Sabanci University in Istanbul, Turkey, recently conducted a study that examined how individuals fit into organizations. They classified organizations using two category distinctions previously used to classify countries.

Individualistic organizations, like individualistic countries such as the United States, tend to be more focused on costs and benefits, with a "what's in it for me?" attitude. Independent thinking and individual responsibility are valued highly in individualistic organizations.

Collectivistic organizations, like collectivistic countries, encourage loyalty to the group and a willingness to make personal sacrifices to advance the greater good.

Robert and Wasti found that hiring an employee with a collectivistic attitude to work in an individualistic organization, or vice versa, was likely to produce cultural clash. A lower sense of job satisfaction, a low sense of respect from the

organization and poor expectations for promotional opportunities resulted from this clash.

This finding is particularly significant for multinational corporations, which often employ workers in many different overseas operations. Robert notes that while an organization's headquarters might develop a strong and effective individualistic culture in the United States, employees in collectivistic countries such as China or India might find the push toward independence and individual responsibility required by this type of culture to be uncomfortable or even offensive.

"Global businesses deal with issues of national culture, organizational culture and individual values on a regular basis," Robert said.

This potential clash between organizational culture and individual employee culture also can be taken into consideration during the hiring process. However, Robert warns against trying to hire a workforce that adheres strictly to the organizational culture. Having a group of employees that are too much alike can lead to stagnation; the organization quickly can run out of the type of fresh ideas that are the lifeblood of many successful organizations.

classifieds

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In a world of sufficient resources, social and economic justice mandates minimal standards of economic and political equality.

No human being should die of hunger-related illnesses or curable diseases; be without safe housing and adequate clothing; lack access to employment; be without protection against violence; be denied equal opportunity for education; or be without protection from discrimination based on age, culture, class, ethnicity, disability, gender, national origin, race, religion or sexual orientation.

Social work practice based on social and economic justice recognizes that people become empowered through the ability and opportunity to make choices that give them more control over their presenting problem situations and, in turn, their own lives.

However, central to social work practice based on this perspective is that people must not only be able to make their own choices, choices must also be available to them.

It follows that teaching, research and service that enhances resources, enables access to services, promotes advocacy, and engenders change... these are central to the MU School of Social Work.

-Charles D. Cowger, PhD, Director

Leadership for Social and Economic Justice

Getting the lead out

DEADLY LEGACY MU veterinary toxicologist helps environmental regulators target the most dangerous contamination sites

One piece of lead is pretty much like another one, right?

Not necessarily. Mankind has been mining and smelting this soft, gray metal for thousands of years. It has dozens of industrial uses today, and is manufactured into products that range from car batteries to bullets. But those manufacturing processes can change the chemical composition of lead in ways that make it even more dangerous for people.

We've known for decades that lead is extremely harmful to humans. Toxic levels of lead can damage the kidneys, blood and nervous system. We also know that young children are even more susceptible to lead poisoning than adults. In kids, lead poisoning can cause learning problems and permanent neurologic damage.

Lead mining has long been an economic bonanza for Missouri, and mines in the Show-Me State still produce most of the nation's supply of this vital metal. At the same time, federal and state agencies are struggling to clean up the deadly legacy that lead has left behind in Missouri and around the country.

That's where Stan Casteel comes in. Casteel, a veterinary toxicologist at Mizzou, has pioneered a research model that helps those agencies pinpoint exactly where the deadliest levels of lead are in a contaminated site.

His research looks at the "bioavailability" of lead found in samples taken from those sites. In other words, he's studying how much of the lead that humans ingest is actually absorbed by the body.

Because the physiology of a pig is so similar to a human's, Casteel's model uses juvenile swine to track how the human body would react. The pigs are fed low, non-toxic doses of a soil sample mixed in with their food. Over a 15-day period, Casteel's research team periodically tests blood samples for increasing levels of lead.

"We want to mimic the exposure that would occur with children living in areas near these lead-contaminated sites," he says. "We want to know how much lead is absorbed over time and where it goes."

Casteel worked recently with the federal Environmental

Protection Agency and the Missouri Department of Natural Resources to analyze lead levels around an abandoned mine and smelter near Joplin, Mo.

Casteel, who also is director of MU's Veterinary Medical Diagnostic Laboratory, discovered high levels of a type of lead that is readily absorbed by the human body. Because of his findings, the EPA eventually excavated and replaced contaminated dirt from around 2,600 homes in the area.

Last year, he studied the lead bioavailability in soil samples from Herculaneum, Mo. A lead smelter operating there for more than 100 years is believed to be responsible for dangerous levels of lead found in 45 percent of children living near the smelter.

Studying the bioavailability is important because not all lead is created equal. Some forms are more likely to be absorbed by the body than another. "There are control mechanisms in the gastrointestinal tract — the gut — that regulate how much of anything is going to be absorbed from the gut into the bloodstream," he says.

Lead has an atomic makeup similar to calcium. "It's said that lead follows the calcium stream. So however calcium is absorbed, is going to be mimicked by lead," Casteel says. "Because the gut can't differentiate very well between the two, it tends to absorb a pretty good fraction of lead.

"Children are our biggest concern here, because in general they tend to absorb a higher fraction of the lead they ingest than adults do," Casteel says. "The reason for that is common sense. Children have a rapidly developing skeleton that requires calcium to grow. Because lead follows the calcium stream, when these children absorb a higher fraction of calcium they also absorb a higher fraction of lead."

Most of the lead ore mined in Missouri is in a mineral form called "galena." Its chemical composition is lead sulfide, which is poorly absorbed by the human body.

At the site near Joplin, however, the lead contamination was in the form of lead carbonate. Contamination at the Herculaneum site is primarily lead oxide from the smelter fallout. The body readily absorbs both of those forms of lead. In addition to its chemistry, the physical form of lead — or instance, the size of the lead particles — also makes a difference in bioavailability.

Armed with Casteel's data,

federal and state agencies can make better decisions about what areas in a contaminated site pose the most danger and require the most immediate attention. The information better protects public health, and at the same time it lets those agencies spend tax dollars most efficiently.

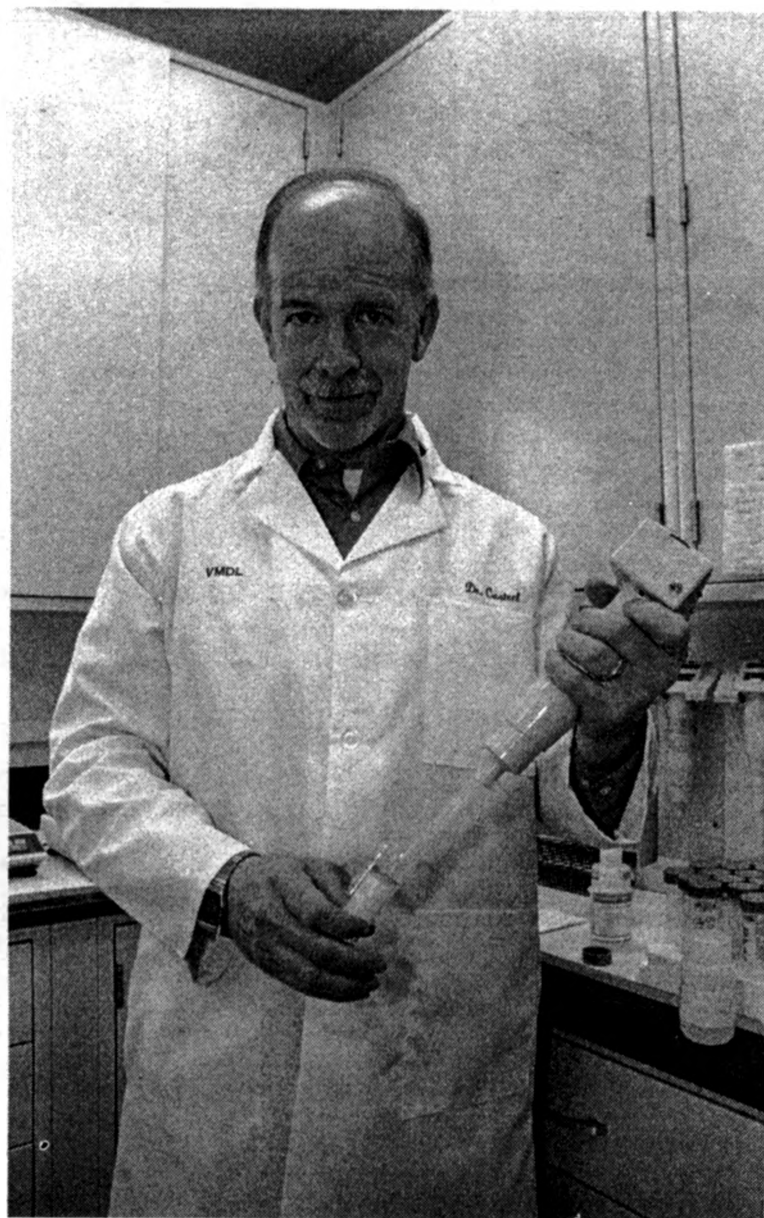
"In a way, our research is a little unusual," Casteel quips. "We're actually trying to save the government money."

Since 1994, Casteel has been using his swine model to test samples from more than two dozen Superfund sites around the country. He's also studied sites contaminated by arsenic and cadmium, and is gearing up on a project to study chromium contamination.

He points out that all those potentially toxic substances occur naturally in our environment — it's just a matter of degree. "There are toxins all around us; you can't get away from them," he says. "As long as we keep below the toxic threshold, we'll be all right."

HEAVY METAL Stan Casteel, director of the Veterinary Medical Diagnostic Laboratory, has pioneered a unique method to study the 'bioavailability' in the human body of such toxic substances as lead, arsenic and cadmium.

Steve Morse photo



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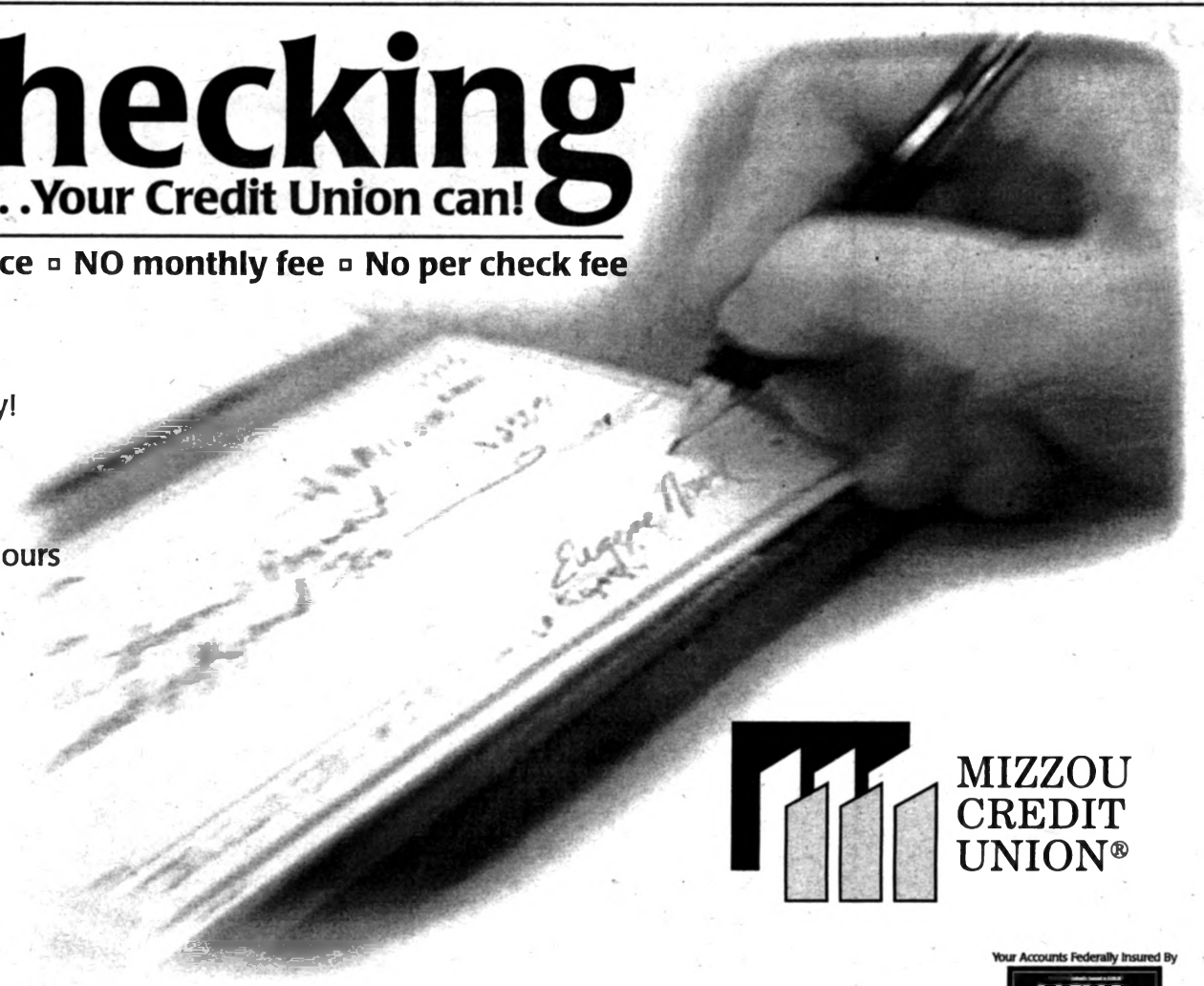
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Unleashing an energy alternative

As politicians and government officials debate how the United States can reduce its dependence on foreign oil, a carbon material recently discovered at MU could help solve the problem. Peter Pfeifer, professor of physics, believes this new material could position methane as the fuel of choice for alternative fuel vehicles.

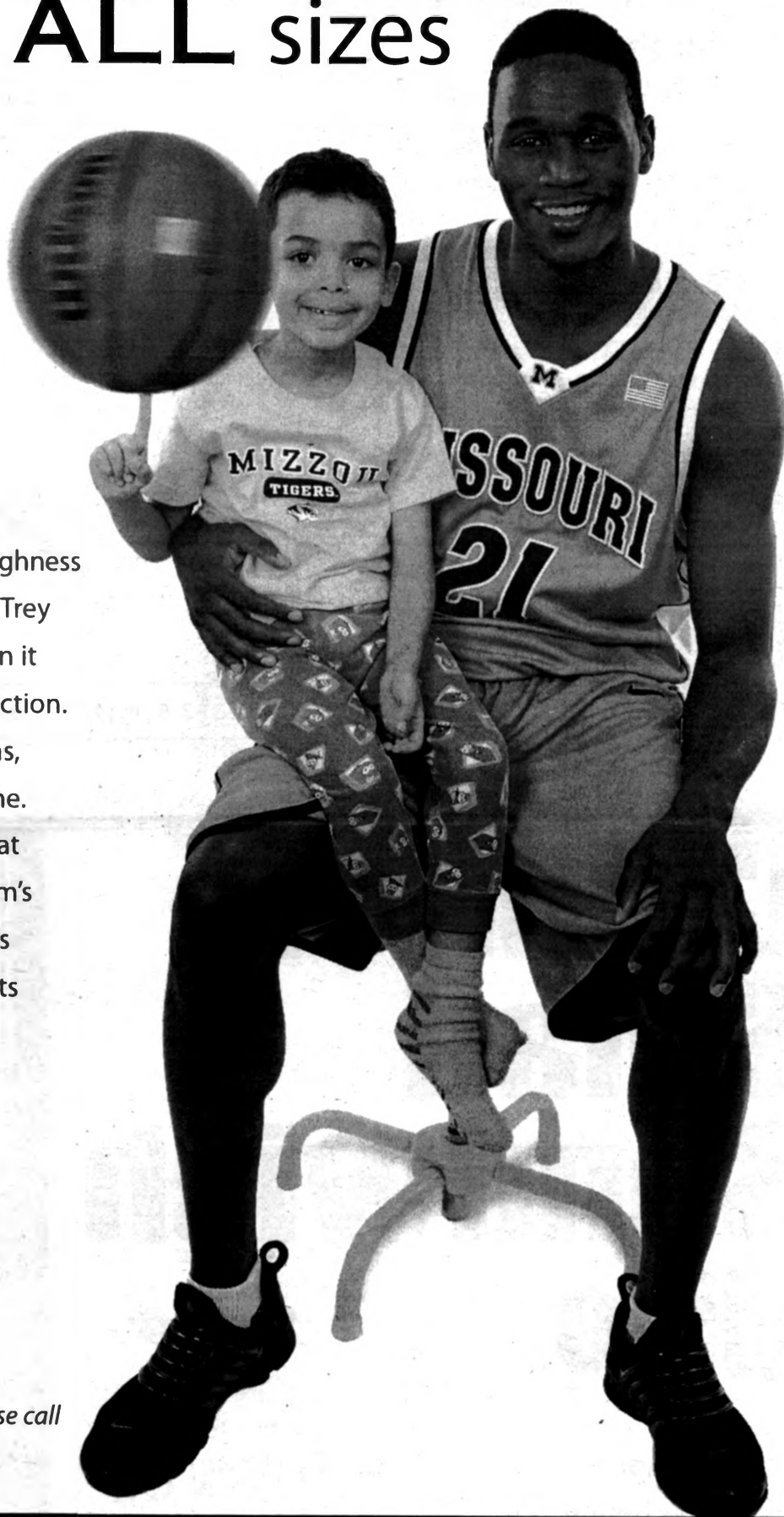
While studying the internal structure of activated carbon — a porous material commonly used in processes such as air filtration and water purification — Pfeifer and his collaborators discovered the material they had created contained “carbon nanopores,” a network of uniform channels that penetrated throughout the carbon. What makes this network unique is that it is fractal, a geometric pattern that is repeated at ever smaller scales “This discovery means we can predict how the carbon nanopores will act as a material, and we believe they have potential for a number of applications, the most promising of which is alternative fuel storage, particularly of methane gas,” Pfeifer said.

Currently, methane is stored in heavy-walled steel cylinders under extreme pressure — more than 3,000 pounds per square inch (psi). If such a cylinder was used as a vehicle’s fuel tank and there was an accident, the tank could explode like a bomb. Pfeifer said that if carbon nanopores were used, methane could be stored safely.

“Our material offers a number of advantages for methane storage: It’s lightweight, easy to manufacture in large quantities and relatively inexpensive,” he said. “But most importantly, it would allow the methane to be stored at a safer, significantly lower pressure — about 530 psi — which reduces the risk of an explosion should a methane-powered vehicle be in an accident.”

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