

**ONE RURAL AMERICA** issue won't stay down on the farm. The farm financial crisis affects not only the 3 percent of the population involved in agricultural production. It also ripples through farm communities and to city neighbors.

"There's four times the amount of debt, estimated at \$50 billion, than the system can accommodate," says Dr. Abner Womack, co-director of the University's Food and Agricultural Policy Research Institute. Agricultural loan defaults impact the general economy in the form of higher interest rates, higher unemployment, reduced gross national product, fewer housing starts, lower personal income and a larger federal deficit, concluded a study by FAPRI, *Farm Journal* magazine

and Wharton Econometric Forecasting Associates. "You will feel it, and I will feel it," Womack says.

"Thirty percent of farmers are in financial difficulty. I think we'll lose 15 percent to 18 percent of our farmers in the next three years. The debt that they hold is so large it can't be ignored."

**THE ISSUE** is not being ignored by the University of Missouri. College of Agriculture Dean Roger Mitchell gives the farm crisis high priority and personal attention. "Not only is agriculture in trouble, but also the rural community, from the farmer to the implement dealer to the drug store owner," he says.

In November and December, Mitchell visited 19 rural towns in all corners of the state to address the problems and opportunities rural Missouri is facing. These 19 towns were earlier visited by a University team led by Jim Boillot, BS Agr '58, MS '59, former director of the Missouri Department of Agriculture and current director of intergovernmental affairs for the U.S. Department of Agriculture. The original visit and Mitchell's follow-up are part of an action research project, "Rural Missouri 1995: Challenges and Issues," brainchild of Dr. Bruce Bullock, chairman of agricultural economics. Also part of the 1995 project were meetings among leaders of the University, state government and business, and the formation of five

## THE UNIVERSITY AND THE FARM CHALLENGE

By KAREN WORLEY Photos by DUANE DAILEY

BOOSTING MISSOURI AGRICULTURE, right, is research that will increase the nutritional value of soybeans. Below, William Phillips, left, senior vice president with Mallinckrodt in St. Louis, views a tissue culture display with, from his left, Dean Roger Mitchell, Vic Lambeth and Chaoyi Dai.



task forces to study economics, resources, rural infrastructure, community and technology.

"The University can have a primary role, can generate a sense of cohesiveness by approaching the farm crisis in a statewide manner," Mitchell says. "The 1995 project is not a blueprint for the future. Rather it's a basis from which the public sector, private sector and rural community can come together to work toward common goals."

**THE PROJECT** describes the economic situation and technological transformation taking place in rural Missouri. Experts trace the roots of the economic problems to 1980, when the Federal Reserve and the federal government decided the double-digit inflation of the late 1970s was bad. Putting the lid on inflation made interest rates soar, the American dollar strong and American products more expensive to buy. While worldwide markets enjoyed good years of crops in 1983 and 1984, American farmers experienced bad weather during three of the past five years. Farmers struggle to pay the interest on land purchased during high inflation, even while farm income falls and land values erode. The combination, says Rex Campbell, BS Agr '52, MS '59, PhD '65, chairman of rural sociology, "puts a whammy on Midwestern agriculture."

Over the past 50 years, technological advances increased grain yields up to 50 percent. With a stable population, "You need fewer people involved in agriculture production to meet your food needs," Bullock says.

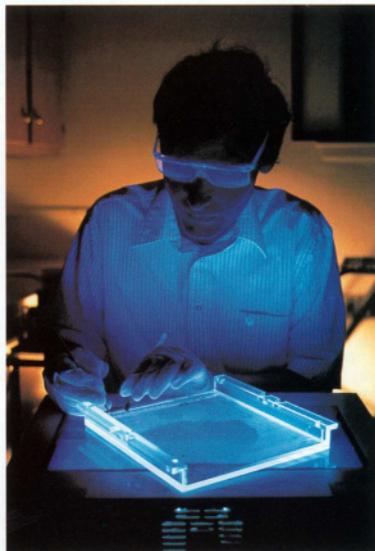
The 1995 study is "not optimistic nor pessimistic, just realistic," Campbell says. "There are major problems, but there are major opportunities, too."

**TO HELP** rural Missourians ferret out those opportunities, a program called Alternatives for the '80s was developed. "It unites the University and people of Missouri in an innovative partnership," Campbell says. University help comes from people in University Extension, colleges of Agriculture, Home Economics, Public and Community Services, and Lincoln University. Outside the University, an array of private citizens in diverse fields are providing advice.

Mitchell sees the Alternatives program as a way to keep money in the community, be it a town, county or trade area. Adds Campbell, "We're looking for niches that will add additional income to farm families and rural communities."

The University effort runs the spectrum from immediate, low-risk opportunities to long-term, high-risk ventures. "There are going to be failures as well as successes," Campbell says. It also celebrates Missouri's diversity. "The terms back East, 'out West,' 'up North' and 'down South' have greater meaning if you're standing in Missouri than almost anywhere else," says Dr. Daryl Hobbs, professor of rural sociology. "Missouri is No. 2 in cattle and No. 2 in automobile production. That's the contrast right there." Of

**PLANT PATHOLOGIST Steve Pueppke uses ultraviolet light to study DNA as part of the Food for the 21st Century program.**



## THE NEW AGGIE

**WILLIE NELSON** and Waylon Jennings advise mothers not to let their children grow up to be cowboys. Most Missouri farmers think along the same line. In a recent Missouri Farm and Rural Life Poll conducted by two Mizzou rural sociologists, 60 percent of farm operators said it's unlikely their children will grow up to be farmers.

It is true that a small number, only 10 percent, of the 25 million employed in the food and agricultural sector work on the farm, says Diana Hesel, assistant dean of the College of Agriculture and assistant director of resident instruction. The remainder are employed "between the gate and the plate."

The food and lodging industry is the second largest employer in the nation, with 6 million workers. That's not surprising, she says, since "people eat an average of two meals a day outside the home."

As fields of study, food service and lodging management, biochemistry and food science are hot, Hesel says. "We can't graduate students fast enough. In food science, there are five jobs for every one graduate."

Earnings are high, too. Katherine Thomas-Sicht, career development and placement coordinator, reports that annual earnings for 1984 graduates averaged \$16,747 with bachelor's degrees, \$20,134 with master's degrees and \$29,500 with doctoral degrees.

"People assume the farm crisis

means there are no opportunities in agriculture," Hesel says. Not true. "It doesn't apply to all segments of agriculture. Agriculture is an area where people can readily find employment."

The U.S. Department of Agriculture estimates that more than 59,000 college graduates will be needed each year to fill positions in food and agricultural sciences.

Another misconception is that agriculture students are from rural backgrounds. That's not true, either. Urban students represent 40 percent to 45 percent of the College of Agriculture enrollment.

Plenty of scholarships are available, too. In 1985-86, two out of five agriculture freshmen received scholarships. A total of \$110,000 was divided up among 135 students.

Enrollment is down from the 1977-78 peak of 2,764. In 1984-85, it was 2,212. Hesel pins it on two factors: the wave of ecology-minded students and baby boomers have graduated from college.

"People don't have an adequate definition of food and agricultural sciences," Hesel says. "Even the folks who grew up on the farm sometimes don't factor those opportunities into their definition of agriculture."

"Tissue culture, gene splicing, laser technology, microprocessors, food engineering, sensory analyses and robotics are all part of agriculture."

Missouri's 115,000 farmers, 28,000 of whom have large debt, Mitchell says. "With such a diverse group, we are striving to serve each group's unique needs."

Alfalfa, forage-based beef finishing and new crops hold exciting promise. These areas of economic development were chosen for their ability to exploit Missouri's competitive advantage while at the same time preserving natural resources, says Dr. Jerry Nelson, professor of agronomy.

Improved varieties and more knowledge about soil requirements and harvest management give alfalfa farmers the competitive edge they need. Plus, growing alfalfa is non-crosvie. That's good because Missouri is the third most crosvie state in the country. Nelson estimates that Missouri imports one-fourth or more of its alfalfa. One four-county area alone imported \$1.5 million worth of alfalfa, mostly from Kansas.

"There's no reason we can't keep that money in the state," Nelson says. "Alfalfa is a mainstay in dairy rations and can be a valuable component in beef rations. Horse racing will increase the market that much more."

Forage-finished beef also promises exciting opportunities. Even though Missouri produces more than 2 million beef calves a year, fewer than 10 percent are finished in the state. Missouri farmers could retain ownership of the calf until it's a heavier weight, say 700 pounds, and get a bigger piece of the consumer's dollar.

"We have the technology through improved pasture-management systems and crossbred animals that can gain faster," he says.

**ANOTHER WAY** to generate jobs in Missouri and contribute directly to the rural economy is through meat processing. Missouri has 120 small processing plants but no large commercial beef processing plant.

Processing plants could deliver forage-based beef, which is lower in cholesterol and calories, in a convenient form to local markets. "The calf may not leave the state, maybe not leave the county, a true value-added concept," Nelson says.

Short-run possibilities to supplement family income include selling fresh fruit and vegetables at a farmers' market, farmers renting their land to hunters and a craft catalog. The \$15 catalog, *Best of Missouri Hands*, will show the arts and crafts of 200 Missouri artisans, says Betty Feather, PhD '76, associate professor of clothing and textiles. It will be available in June.

**A LONG-TERM** University investment that will pay off 10 to 15 years from now is an extensive research project called Food for the 21st Century. It involves researchers not only in agriculture, but also in home economics, veterinary medicine, biological sciences and chemistry. "If Missouri agriculture is going to remain competitive," Mitchell says, "we need to produce a product at a price that can be sold on the world market." Research will show how to increase reproductive efficiency in farm animals and how to reduce fertilizer costs for crop producers.

In addition, researchers are studying alternate sources of food and animal feed, and specialized human nutrition in people over 60. Funding currently is being sought from industry to explore calcium's role in osteoporosis.

The high-priority Food for the 21st Century got its start in 1983 with \$180,000 from the Development Fund. In fiscal 1985, the state legislature added \$460,000 to the effort, and in fiscal 1986, \$550,000. For fiscal 1987, \$3 million has been requested. "The more rapidly the state can invest in this kind of research," Mitchell says, "the more rapidly we can harvest the benefits."

University Extension's parallel to Food

for the 21st Century is a commercial agriculture program, tagged for eminence in the University's long-range plan. Extension's role, says Darryl Sanders, associate dean of agricultural extension, is to deliver research information to agriculture producers.

Financial counseling and management is available through every county extension center. Forty farm management specialists have trained another 150 area agriculture extension specialists in financial counseling to provide one-on-one counseling for financially strapped farmers. Each center is equipped with a personal computer and appropriate software to analyze agricultural operations. Extension staff members also help farm families identify marketable skills, find off-farm jobs and prepare resumes.

In addition, extension specialists work with a special team of 26 part-time consultants in the MOFARMS program, a joint venture between Mizzou and the Missouri Department of Agriculture. Their primary focus is to provide free financial advice to those who request it.

**WHAT'S HAPPENING** in rural Missouri is more than spreadsheets, interest rates and commodity prices. Financial troubles also are taking their emotional toll on families.

"When you go bankrupt, people don't know what to say," says Dr. Bill Heffernan, a professor of rural sociology who with his wife, Judith, a research associate, studied 40 families forced out of farming for financial reasons in a north-central Missouri county. One bankrupt farmer told Heffernan, "A neighbor crossed the street so he wouldn't have to talk to me."

The suicide rate for farmers is twice that of the non-farm population, Heffernan says. In 1984, a total of 71 Missouri farmers committed suicide, up from 47 in 1982. Missouri farm bankruptcies numbered 459 in 1984, up from 245 in 1982, according to Dr. Steve Matthews, associate professor of agricultural economics.

Heffernan maintains social development should be tied to economic development for most effective results.

"Pick a night. Hold church or school meetings early that evening. Pull the truck out of the fire station, rent a VCR and show free movies. Keep the retail stores open. It just might offer the social interaction stressed people need."

According to the 1995 survey, more than 90 percent felt rural communities must redevelop a sense of community. And nearly everyone recognized the need for greater imagination and innovation.

The sense among University experts working on these issues and challenges is that Missouri doesn't have time to be the Show-Me State. In this time of rapid change, perhaps "Watch Me" would be more fitting.

"We can't claim we're going to save someone's farm," Mitchell says. "However, these ideas might help rural families supplement their income. We know they're facing challenges. It's an honor to be working with them." □



AGRICULTURE DEAN Roger Mitchell, right, discusses alternative income opportunities with farmers during a field day at the University's Delta Center in Portageville, Mo.