

# SPECTRUM

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House speaker Bob Griffin watches the tally board as representatives vote to pass the education tax bill. The bill passed in the last hour of the legislature's session May 17.

JACKIE HOSEY/Missourian

## Legislature sends education package to the voters

In what UM System President C. Peter Magrath described as "a victory for the citizens of Missouri," the General Assembly, in the final day of its 1991 session, voted to send a \$385 million education funding and reform package to a statewide referendum Nov. 5.

The Senate approved the bill by a 25-8 vote in the afternoon and the House, following vigorous debate, passed the bill on a 103-56 vote about 40 minutes prior to the mandatory 6 p.m. adjournment Friday, May 17.

Magrath, who has been an outspoken advocate of increased state funding of Missouri higher education for approximately four years, said he was "gratified by the vote. Even more important, I am tremendously encouraged because the legislative leaders and the governor are united in their support of the bill, which provides improved funding accompanied by innovation and change.

"I salute the leaders of the General Assembly and the Governor," he says, "because there is no greater challenge facing our state and because I

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## Magrath says Missourians are prepared to support the tax increase

(Continued from cover)

believe no action offers greater promise for Missouri's future."

The modified bill, the original version of which was introduced in January by Sen. Jim Mathewson as Senate Bill 353, would provide \$190 million per year for a variety of higher education needs. It also includes a bonding provision for an additional \$35 million for higher education building maintenance and improvements. Elementary and secondary education would receive \$190 million per year and \$5 million would be invested in job retraining and related economic development.

Magrath singled out Mathewson, president pro-tem of the Senate, for his "political courage and his personal commitment to the values of education. He provided the long-term leadership and stamina and imagination to fashion statewide recommendations into law."

More than \$105 million of the \$190 million earmarked for higher education would be invested in mission refinement and execution. More than \$21 million per year would provide additional financial aid for low-income students while \$5 million more would be set aside for math and science scholarships and to improve minority graduation rates. Another \$11 million would provide an incentive fund for new programs proven to increase achievement levels. Community colleges would expand their services and access with nearly \$22 million per year.

Of special interest to the UM System is an \$11.2 million allocation for competitive research in areas critical to the state's economic development and \$1 million earmarked for the UM System's University Extension for expansion of regional programs.

Higher education reforms included in the legislation would strengthen the hand of the Coordinating Board for Higher Education, allowing it to discontinue programs not in keeping with the missions of individual institutions. The bill also provides for creation of focused missions and mission implementation plans and requires performance assessment of students and of colleges and universities.

Because the UM System is nearing the end of a long-term academic planning study, Magrath says it is in an excellent position to meet the requirements of the legislation.

"The bill would provide for most of the

needs of Missouri higher education as determined by several careful studies," Magrath says. "Its passage represents a welcome vote of confidence in our faculty and staff and in the people of our state."

The package would be funded through: a 3/8-cent sales tax increase (\$170 million); an increase in corporate income tax from 5 to 6.5 percent for corporations with taxable incomes greater than \$100,000 (\$39 million); increasing individual state income taxes by reducing the amount of federal income taxes that can be claimed as a deduction (\$176 million), and increased tobacco taxes (\$30 million).

Individual state income taxes would be reduced approximately \$30 million due to increasing the deduction for each dependent from \$400 to \$800.

"There is much to do between now and November," Magrath says. He will begin in June with his second summer tour, including visits with citizens in several Missouri communities.

"We have successfully completed three phases of our campaign," he says. "The success of the fourth phase will be determined by the citizens of Missouri. In November, they will decide whether Missouri will make preparations for the economic challenges of the 21st century. Our research and my own observations tell me Missourians are prepared to support the bill because it is so important to the lives their children will lead. In the campaign's fifth phase, we will continually account to the voters for the use of the additional resources invested in higher education."

## Curators pick College-BASE test for assessment

The UM System Board of Curators voted unanimously May 3 to require undergraduates on all four UM campuses to take the College-BASE test after completing 45 but no more than 90 credit hours. Test results will be reported to the board, to individual students and to faculty on each campus for the purpose of curriculum revision, beginning in fall 1992.

The vote followed President Magrath's recommendation that each of the four campuses should decide which test its students should take. Curators Sterling, Thompson and McHugh expressed dissenting views before the vote.

"I am not an advocate of this test," says Curator Jim Sterling of Bolivar. "I think there are other ways we can do assessment."

Curator Cynthia Thompson, of St. Louis, says that, "I think what we are really dealing with is the proper role of the Board of Curators. Is it our role to dictate to the campuses?"

"I think we all agree that each of the campuses is very different. I think we need to broadly define what our needs are and then

leave it to the campuses to carry out this responsibility," she says.

Curator Jim McHugh, of Webster Groves, also spoke in favor of leaving testing up to the discretion of the campuses.

"My original instincts were based on 32 years in corporate management," he says. "Those instincts told me this decision should be made at the campus level. What I have seen since March has only confirmed the reliability of my original instinctive reaction."

The College-BASE test, developed by a UM-Columbia professor, is designed to evaluate general skills achievement in English, math, science and social studies. It will cost the University an estimated \$132,000 per year to administer the test. Each campus will have the option of adding up to 50 multiple-choice questions.

Board President Webb Gilmore, of Kansas City, says using College-BASE for assessment has a threefold purpose: to evaluate the undergraduate general education curriculum, measure student performance and improvement, and provide public accountability.



## Magrath recommends student fees continue to increase

At the May 3 Board of Curators meeting in Rolla, UM System President C. Peter Magrath recommended that the University adopt a five-year plan to increase fees \$200 a year above the rate of anticipated inflation for undergraduate students, and that comparable adjustments be made for professional and graduate programs.

His recommendation followed the final report of the Student Fee Task Force, chaired by UM-Kansas City Chancellor George Russell. The board will vote on the plan in June or July. If passed, the new fee structure will be implemented July 1, 1992.

"Unless the people of Missouri are willing to put more money into higher education, we have to move to a more moderate fee policy, such as Illinois has

done," Russell says. "It's not one that would rival New Jersey or Pennsylvania, but we cannot operate as though we are in Texas."

Revenues generated from the increase in student fees would total about \$40 to \$50 million annually at the end of the five year period, Magrath says.

"If the initiative for the tax increase for higher education moves forward, this action on our part will extend our continuing efforts to find the resources necessary to provide quality education," Magrath says.

"If the present effort fails to result in a tax increase, the University of Missouri System must continue to do the best it can with the resources available. We must use every reasonable approach to generate the funds necessary to maintain the quality of our existing pro-

grams, and to improve quality where possible."

Magrath recommended the board set a five-year student fee plan that will increase charges \$200 per year for resident undergraduate students above the anticipated rate of inflation. He called for non-resident undergraduate fees to increase to three times the resident fee. Tuition for graduate students would increase \$203 per year on top of inflation, according to Magrath's plan.

In an independent action on March 15, the Board of Curators unanimously approved a 12 percent increase in student fees which takes effect this summer. It raised fees \$216 a year for Missouri resident freshmen and sophomores and \$240 for in-state juniors and seniors.

# Granger wins first Presidential Award for Outstanding Teaching

Charles R. Granger, professor of biology and education at UM-St. Louis, was named the first recipient of the Presidential Award for Outstanding Teaching at the UM System Board of Curators meeting May 2 in Rolla.

Created in November 1990 by UM System President C. Peter Magrath, the annual award includes a \$15,000 stipend.

"The award is designed to recognize outstanding teaching, just as the Presidential Award for Research and Creativity recognizes outstanding research," Magrath says. Tenured faculty members with a record of outstanding teaching for at least 10 years on a UM System campus are eligible for the award. Each campus may submit one nominee.

Granger, currently in his 20th year at UM-St. Louis, teaches introductory biology to classes of several hundred students. Nearly 15,000 UM-St. Louis students have taken his biology courses.

He came to UM-St. Louis in 1971 after serving one year as assistant for academic affairs in the Division of Biological Sciences at Cornell University. He completed his doctoral work in plant physiology at the University of Iowa in 1970. He earned a master's degree at the University of Pennsylvania and a bachelor's degree from Iowa State University with a major in

zoology and minors in botany, chemistry and education.

Granger has developed sophisticated audio-visual aids and motivational devices to enhance students' classroom experience. To help outside the classroom, he has prepared a booklet, BIOTIPS, an aid to learning basic biological concepts.

Granger conducts an annual science competition, now in its 18th year, for high school students from across Missouri, and he has developed science programs for area high school students with exceptional abilities.

He is also the executive director of a National Science Foundation-funded program that offers mathematics and science enrichment activities to children and teachers in grades 3-12. Several institutions, including UM-Rolla and the St. Louis Public Schools, are part of this effort.

Granger's dedication has been recognized with numerous awards, including the American Association of Higher Education's "Stand and Deliver Teaching Award" and the UM System's Burlington Northern Faculty Achievement Award.

"Dr. Granger is no less than outstanding. He has significantly increased the level of science competence in an entire generation of area citizens, and as a role



Charles Granger (right) works with Craig Gilbert on a science experiment

model he has influenced many of us much more deeply," says Albert J. Hitt III, a biologist and engineer on the Electrophoresis Operations in Space Project of

McDonnell Douglas Astronautics, and a former student of Granger's. "Dr. Granger has an ability to intellectually stimulate, to motivate, even to inspire."

## UM System programs named 'Pioneers of Progress'

University Extension's Missouri Rural Innovation Institute and the Institute for Policy Leadership at the University of Missouri-St. Louis were among 28 non-governmental organizations honored as "Pioneers of Progress" April 3-4 in Chevy Chase, Md.

The programs were selected for recognition by Jobs for the Future, a Massachusetts consulting group hired by the U.S. Department of Labor to analyze and make recommendations concerning the economic competitiveness of the nation's work force.

Programs profiled in the Jobs for the Future research report were from five states; five were national in scope. Also honored from Missouri were Confluence St. Louis and Kansas City Consensus, non-profit citizen groups designed to improve the quality of life and democratic participation in the regions. Both groups recently have studied education needs in the state and support a tax increase for higher education.

MRII, a non-profit educational program funded by the W.K. Kellogg Foundation, provides technical assistance and education to rural communities. Its focus is on systemic change to help non-profit and governmental bureaucracies, as well as University Extension, be more driven by customer needs. It conducts several experimental projects:

- EXCEL, a training program on volunteer leadership for rural communities;
- CONNECT, a resource and referral service for public and private decision makers;
- Missouri Community magazine, a vehicle to promote successful community development programs, sent to 10,000 decision-makers;
- Missouri Retention and Expansion Opportunities (MO-GRO), a program working to stabilize the economic base of local communities;

- Going Global, a computerized marketing information program for prospective business and agricultural exporters; and

- County Health Project, an outgrowth of a satellite teleconference that led communities to develop local plans of action.

The Institute for Policy Leadership was created by Harriett Woods, former lieutenant governor of Missouri, with UM-St. Louis, to upgrade the quality of public policy decision making. The institute is a link between aca-

deme and politics. Projects include a conference on improved decision making for legislators, a multistate leadership conference for women legislators, a resource bank for material related to homelessness and housing, and development of alternative funding sources for housing starts.

The Danforth Foundation provided seed money for the IPL. The group also raises funds from labor organizations, corporations and individuals.

## Spectrum now printed on recycled paper using soybean-based ink

In keeping with a UM system-wide effort to make recycling a way of life, *Spectrum* is now being printed on 60-pound recycled offset paper. The only monthly publication sent to approximately 18,000 faculty, staff and retirees throughout the UM System, a year's supply of paper for *Spectrum* is equivalent to 2 million sheets of letterhead.

"Printing Services is supportive of recycling," says Rick Wise, manager, customer services. "We are looking for ways to provide recycled paper as an alternative where there is a parallel sheet available that is identical to the virgin paper."

"We weigh recycling against cost, quality and printability. If a recycled paper is available for a printing project and it costs less than 10 percent more, then we strongly encourage the

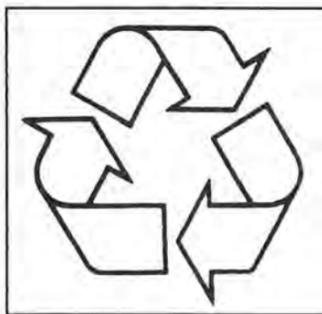
use of the recycled sheet."

Partly as a result of the UM System University Relations' commitment to printing *Spectrum* on recycled paper, Printing Services converted its entire inventory of 60-pound offset paper to a recycled product, Wise says.

*Spectrum* also will be printed with a new soybean-based ink instead of a petroleum ink, another change that will have an environmental impact. At the same time, it helps boost the market for one of Missouri's

important agricultural products.

The new inks have several advantages, says Larry Jahnke, production manager at Printing Services. Cleaning the presses after each run is easier when soy inks are used, and because soy ink is not toxic, the empty containers don't have to be sent out for special disposal.



# Olson wins Presidential Award for Research and Creativity

Ronald E. Olson, Curators' Professor of physics at UM-Rolla, was awarded the Presidential Award for Research and Creativity at the UM System Board of Curators meeting May 2 in Rolla.

As winner of the award, Olson receives \$15,000 earmarked to support his research. The annual award is supported by investment income from the 1979 sale of UM System-owned property near Weldon Spring in St. Charles County.

Olson came to UM-Rolla from the Stanford Research Institute a decade ago. Since then, his reputation as one of the world's leading atomic collision theorists has continued to grow.

Olson's expertise is in the study of what happens when ions hit atoms and molecules. This is

largely theoretical work that often requires the use of supercomputers and that has very practical implications.

An understanding of such collisions is essential to building long-lasting space satellites that won't be harmed by cosmic rays, to developing better lasers, to perfecting radiation treatments for cancer and to understanding nuclear fusion, a promising power source.

Olson's research has been referred to more than 325 times in the professional literature. In the last two years he was published 30 times in journals such as *Physical Review Letters*, the most prestigious



journal in physics for the presentation of new discoveries. He also serves on the editorial board of the *Journal of Physics*.

Olson has been involved in collaborative research with scientists in Japan, France, Germany, Denmark and the Netherlands. He has received many awards, including a

Fulbright Fellowship and Germany's prestigious Humboldt Senior Fellowship.

In addition, he has chaired or organized scientific gatherings. He serves on the organizing committee for the Eighth Conference on Atomic Process in Plasmas, which will be held in August at the

Massachusetts Institute of Technology.

His international reputation has benefitted the Rolla campus, where he has attracted more than \$1 million in external support. Five students have completed their graduate work under him, and he has supported several post-doctoral fellows.

"Ron Olson not only has contributed enormously to understanding the fundamental nature of atomic interactions, he is especially effective in challenging people to look at new ideas," says James H. McGuire, professor of physics at Kansas State University. "That he is equally effective with students and internationally leading experts speaks to the breadth of his appeal. Missouri is fortunate to have such a person in its system."

## Briefly • Briefly • Briefly • Briefly • Briefly • Briefly • Briefly

### Apple gives UM-St. Louis equipment for networked computer lab

UM-St. Louis' School of Education has been awarded \$165,000 in computer equipment from Apple Computer, Inc. for networked Macintosh Labs at the University and Parkway Central Junior High School as part of the Christopher Columbus Consortium.

Faculty and students are exploring the challenges of integrating technology into the curriculum and the classrooms. The all-electronic system offers an opportunity for UM-St. Louis teachers-in-training to learn the latest in teacher education through the integration of computer technology.

The teachers-in-training at UM-St. Louis and students at Parkway Central Junior High School also are connected by voice, and in the future will have video monitors. There is also a research arm of the project that will investigate the effects of technology on teaching and learning.

At Parkway Central Junior High School, teachers are using the computers to develop lesson plans for the school's curriculum. An "at risk" class of Parkway students is using the computers as an aid to help motivate learning skills.

The consortium, sponsored by Apple, was created to empower teachers and faculty in effective technology use. UM-St. Louis and the Parkway School District are on the cutting-edge of computer technology in education and join the University of Georgia, the University of Texas-Austin, the University of North

Texas, Vanderbilt University, Florida State University, North Carolina State University and others as one of 26 partners in this unique consortium.

### Explanation of Benefits Forms available on each campus

A detailed description of how your insurance claims are processed, including an explanation of benefits is available from the benefits representative on each campus.

### UM Administrative Affairs Office recommends money and time-saving changes to payment process

By updating its payment process, the University could save a substantial amount of money, says James T. McGill, vice president for administrative affairs. After reviewing the University's current system for preparation and handling of checks, including payroll and vendor payments, the Administrative Affairs Office is recommending the following cost-saving measures:

*The signature to the check should be affixed at print time and mechanical equipment should be used when practical to insert items that accompany the payroll and other checks. This should save at least 4,300 hours of manual labor annually that is now being used to insert documents and affix the signature. Conservatively, cost savings would be \$50,000 per year.*

*All new employees should be required to receive their pay through*

*the Automated Clearing House electronic transfer (ACH) process and existing employees should also be encouraged to receive their pay through ACH. Employee travel expenses should also be paid through ACH. Campuses have the option to encourage, rather than require, students to receive their pay through the ACH.*

*The ACH process has the benefit of being both a less expensive method of providing pay to faculty and staff and a faster method of providing pay compared with current practices. Each check processed costs the University about \$15; an ACH transaction is \$10. Changing to the ACH method would result in a \$60 per year savings for each employee paid monthly, and \$130 for staff paid biweekly. If all employees shifted to ACH, the University could save \$1.2 million annually.*

*An emergency check writing system should be established at each campus. Current technology and special controls will allow the decentralization of this process and still provide an accurate record of transactions in the University's accounting system.*

*Travel expenses less than \$25, which do not require a receipt, should be allowed to be reimbursed through a system similar to the University's petty cash system. Approximately 6,000 travel expenses under \$25 were requested for reimbursement during the fiscal year 1990. A large number of these were for meals and mileage. The use of petty cash for reimbursements would result in cost savings in processing these types of transactions.*

*"If these changes are instituted, the savings will result in more funds being available for the primary missions of the University," says McGill. "The staff in administrative affairs is continually seeking ways to*

*provide quality service in a most efficient manner."*

### UM-Rolla's Ta-Shen Chen named Curators' Professor of mechanical engineering

The UM System Board of Curators has named Ta-Shen Chen, of UM-Rolla, a Curators' Professor of mechanical engineering. The professorship is awarded to outstanding scholars with established reputations in

their fields of scholarly expertise.

Chen, a graduate coordinator in UM-Rolla's mechanical and aerospace engineering and engineer-



ing mechanics department, is nationally and internationally known for his research work in convective heat transfer, and he is a leading authority on mixed convection and wave and vortex instability of buoyancy-affected flows. His pioneer research in these areas has had a significant impact on the fundamentals of heat transfer and transition in mixed convection flows.

Chen joined the UMR faculty in 1967. He received a bachelor's degree from the National Taiwan University, a masters degree from Kansas State University and a doctorate degree from the University of Minnesota. He has devoted 24 years of his academic career at UMR to strengthening graduate and research programs in the area of thermal science in mechanical engineering.

# UM Benefits Office improves system for TDA deposits

A new system enacted April 30 to electronically transfer employee contributions to the UM Tax-Deferred Annuity Plan eliminates the possibility of delays in deposits, says Mike Paden, director of Faculty and Staff Benefits.

Contributions to the Tax-Deferred Annuity Plan have been mailed to the 34 investment companies the University contracts with under the program. It sometimes took 15 to 20 days for the checks to be deposited in the employee's name. Under the new system, the transfer of funds usually takes place on the last working day of the month. A majority of the companies in the TDA program are covered.

"This feature will provide for a more prompt investment of funds and accordingly will provide for increased return on an employee's investment, since the funds will be invested for a longer period of time," Paden says.

"We tried to enact this system a few years ago, but we ran into problems. The problem is not so

much transmitting the cash, but the data that must go with it. Recent changes in technology have made this improvement possible."

The system is a joint effort of the Benefits Office, Management Information Services, Investments and Banking and the Controller/Accounting Office.

The UM Tax-Deferred Annuity Plan allows all part-time and full-time employees to invest a portion of their salary before federal and state income taxes are paid. The salary deferral is placed into an investment account with a company chosen by the employee. The amount deferred and any earnings are not taxed until the money is taken out of the account.

"The TDA Plan allows UM employees to reduce federal and state income taxes and save for retirement," says Paden. "It's important to remember that funds invested under this program will be taxed at the time of withdrawal - usually at retirement."

Currently, 3,560 employees systemwide contribute just over \$1.1 million to the TDA program

each month, he says. The average monthly contribution of those employees participating in the program is \$310 per person. The minimum amount employees are allowed to contribute is \$25 per month.

"University employees continue to have a keen interest in planning for retirement years," says Paden. "In 1986, UM employees contributed \$10 million to the program. That has increased steadily to \$13 million in 1990.

"This program has received increased attention from employees as a result of legislation in recent years which severely limits the use of Individual Retirement Accounts for University employees.

"If your objective is to save money for retirement, you can't find a better program than the TDA plan," says Paden.

If you have any questions about the Tax-deferred Annuity Plan, please contact your campus benefits representative.

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