



(Bud Carlson photo)

**B**oth the quantity and quality of teacher education in the University of Missouri System are on the upswing, according to a report delivered at the March Board of Curators meeting.

Mark Burkholder, associate vice president for academic affairs, told the board undergraduate teacher education enrollments have increased overall by 38 percent from 1985 to 1989, with the largest increase occurring at UMSL, with a 115 percent growth.

UMSL, UMKC and UMC offer education degrees; UMR offers specialized teacher education programs, but no degrees.

The number of non-education majors completing certification requirements also increased by 253 students during the same period.

Curator Sam Cook at the January board meeting requested a report on teacher education. He said he was responding to concerns expressed by Gov. John Ashcroft and the Coordinating Board for Higher Education.

The education curricula have been improved at all three campuses, Burkholder said. "As a result of sig-

nificant curricular changes in the 1980s, many undergraduate education majors now complete more credit hours than the average arts and science major and complete more hours in arts and science than in education. The primary emphasis, in other words, is on content rather than on method."

When UMKC implements new requirements this fall, each of the programs will require more credit hours than was the case 10 years earlier, Burkholder said. Each also requires more hours for graduation, more work in liberal arts areas, and more time spent in student teaching and related field experience.

"Academic requirements, in short, have become significantly more demanding," he said.

Students in each school substantially exceed state admissions requirements with both ACT scores and grade point averages. After entering the programs, students also score above the state average on the College Basic Academic Subjects Examination, a Missouri assessment test. Their scores on the C-BASE, in fact, are

"the highest in the state," Burkholder said.

Graduates of the programs have a high rate of employment and receive post-graduation support from their respective campuses.

"The colleges and schools of education, in short, enter the 1990s with tight, demanding curricula and qualified students," Burkholder concluded. "Their graduates will provide the state's children with high-quality education in the years to come."

\* \* \*

*For more teacher education news, see pages 2 and 3.*

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# Seize the moment

Webb Gilmore urges curators to participate in statewide higher ed planning process

By Bob Samples  
University Relations

University of Missouri System curators should seize the "unique opportunity" to participate in the review of higher education currently under way by a state-appointed commission, Curator Webb Gilmore said at the March Board of Curators meeting. He made the comments during a discussion of options for the governance of higher education in the state, which focused on the Missouri Business and Education Partnership Commission, a group appointed by the governor and General Assembly to study Missouri's system of higher education.

"We have a unique opportunity and, in my opinion, a responsibility to participate in this statewide planning process," Gilmore said. He outlined four choices for statewide governance that could be considered by the commission:

- continue the status quo (Coordinating Board for Higher Education, UM System curators and separate governing boards of the nine other four-year public institutions)
- continue with the present structure, but give CBHE additional powers over institutional missions and the elimination of degree programs
- create a second system involving the four-year schools that are not part of the UM System
- combine the governance and coordinating functions of CBHE and the 10 separate institutional governing boards into one board

UM System President C. Peter Magrath agreed the board should monitor and cooperate with the commission, but he also reminded curators of the unique position they hold as a governing body

grounded in the state's Constitution. By contrast, the duties and limits of other higher education governing boards were established by state statute.

Other comments:

**Curator Andy Runge:** If existing governing boards were making the "tough decisions" there would be little need to discuss governance. He did not join the Board of Curators to oversee its demise; therefore, the board should start focusing on the matters it can influence within the UM System. He does not support relinquishing any power to CBHE. "I don't think it's broke, but I don't think it's running either," he said of the current system of governance.

**Curator Ed Turner:** The University System should cooperate in statewide planning, and CBHE is the best vehicle for this purpose. CBHE is less politically affected than most perceive because "state officials rely on it to make the tough recommendations they themselves are reluctant to promote." CBHE has been made the "whipping post" for politicians.

**Curator John Lichtenegger:** The strength of the present state system of higher education is local participation on the various boards, but he could support increasing the power CBHE has over the missions and programs of individual campuses.

**Curator Peter Raven:** An effort needs to be made by some statewide entity to continually review the objectives of universities and colleges. He could see a benefit in increasing the funding and functions of CBHE.

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A plan introduced in 1971 to redefine the missions of individual campuses within the University System dominated a discussion on the history of mission statements at the Board of Curators meeting March 22 in St. Louis.

The board discussed at length the "Role and Scope" plan introduced, but never implemented, by former University President C. Brice Ratchford in the early 1970s. It was a plan that some curators have expressed support for as they look toward reviewing and redefining campus mission statements at their May meeting.

Curator Fred Kummer said the Ratchford plan closely resembles the concept of reform suggested by Gov. John Ashcroft in Kansas City late last year. Ashcroft listed refinement of institutional missions as his first challenge to higher education officials preparing Missouri's colleges and universities for the 21st century.

"What were the factors involved in the failure of the 'Role and Scope' plan to take root -- because as you read it, it sounded right. Why did it fall apart?"

Inter-campus rivalry?" asked Curator Peter Raven.

Associate Vice President for Academic Affairs Mark Burkholder said inter-campus rivalry had, indeed, killed the plan. "It would have reduced the scope of the Columbia campus's activities by dividing up certain activities and requiring collaborative efforts (among the campuses)," Burkholder said.

The Ratchford plan emphasized distinctions among the campuses and introduced the concept of University centers in different areas of study. While several campuses would offer baccalaureate programs in some of the same areas, there would be little duplication of advanced graduate or professional programs.

The curators requested more documentation on the Ratchford plan and on the efforts related to the Compensation Improvement Program introduced by former University President James Olson in the early 1980s. The program, which called for the identification of programs to be strengthened, reduced or eliminated, led to alumni and faculty protests and eventually was withdrawn.

## 'Role and Scope' revisited

1970s plan said to resemble Ashcroft's 1990s suggestions

By Bob Samples  
University Relations

## Thomas Jefferson, Presidential awards announced



Joy E. Whitener receives Thomas Jefferson Award

A longtime educator and administrator at UMSL is this year's recipient of the UM System's Thomas Jefferson award, President C. Peter Magrath announced at the March 23 board meeting.

Joy Eugene Whitener, dean emeritus of the UMSL Evening Col-

lege and professor of education, has been associated with the school since 1965. He won the award because he "exemplifies the principles and ideals of Thomas Jefferson," Magrath said. The award includes a \$1,000 check from the Robert Earl McConnell Foundation, and Whitener has indicated he will donate the money to a scholarship fund established in his honor in 1987.

"Few have given such dedicated service as Dr. Whitener to that premier and overriding Jeffersonian principle -- the creation and support of a broad common school system," Magrath said. "After more than 50 years in the profession, Dr. Whitener is still serving public education with distinction."

Among his many accomplishments is the success of the Evening College at UMSL, which Whitener headed for 22 years. At his insistence, it became a college with its own faculty and ability to develop its own degree programs. Whitener's efforts ensured that the Evening College courses were equal to those of the day program.



Robert W. Murray wins Presidential Award for Research

Robert W. Murray, Curators' Professor of chemistry at UMSL, is the 1990 recipient of the University's prestigious Presidential Award for Research and Creativity.

Murray received the \$15,000 award at the March 23 board meeting at UMSL. The money is earmarked to

support Murray's 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.

Murray, a professor of chemistry at UMSL since 1968 and chairman of the chemistry department from 1975 to 1980, is known nationally and internationally as an authority in organic oxidation chemistry, particularly ozone chemistry.

He was named Curators' Professor in 1981. In 1985, the Board of Curators made the UMSL chemistry department one of 10 University System programs targeted for national and international eminence.

Murray's research contributions have applications in solving problems related to air pollution, cancer, aging and energy. In particular, his discoveries about simple reactions between the ozone and organic substances have enormous consequences for the study of atmospheric pollution.

At UMSL, his research has attracted nearly \$2.3 million in grants from the National Science Foundation, the National Institutes of Health and other national organizations.

Curators respond to education report:

# UM System offers state's top education programs

The report to the Board of Curators on teacher education in the UM System (see front cover) sparked a range of comments, including these:

**James C. Sterling:** "A lot of times we hear about duplication of programs in our state, but I think this is a good example. If we were, for some reason, to remove undergraduate education to eliminate some duplication on our campuses, we would be removing what appear to be the top programs in the state."

**Sam B. Cook:** "The fine report you've made indicates that we are making massive strides in increasing the amount of arts and sciences/liberal arts courses our people are taking. But, it seems to me that the University of Missouri System has a unique responsibility at the level of graduate school, in view of the fact that there are plethora of teacher colleges around, some of them called regional universities."

"I'm not suggesting that we should eliminate undergraduate education; on the contrary, undergraduate education is most needed, but it seems to me that at least some institutions in this state ought to be giving degrees on a five-year basis. It seems to me the primary graduate-level research university ought to have such a requirement."

"It's my personal opinion that one of the ways teachers are going to get more adequate compensation, which they badly need, is to be better teachers and better educated, and therefore have more prestige. The solution is not necessarily to pay everybody more money to get better teachers, but first to produce better educated teachers. When the public perceives teachers to be better qualified, they will pay teachers more money. That's where the University of Missouri comes in."

**Edwin S. Turner:** "For the last five years, I've taken a great deal of my own personal time to award curators' scholarships at a number of high schools around the state. My personal observation is, and I'm wondering if the education deans would bear this out, that we're a victim of our own success in integrating the female sex into the professional fields of this nation, and as a result, the very top people in the graduating classes, and you go down to 5 or 10 percent down the line, are not choosing

education as their chosen profession.

"They're choosing other fields, such as engineering, law, accounting and medicine. And, as a result, we are not getting the top quality people that we were 20 years ago in the educational pipeline to teach our young people. I'm convinced that's going on from my own personal sampling and by just asking these very top people who receive curators scholarships what their chosen field is. And I can tell you it's rare indeed to find anyone who's looking at education as a profession."

"I'm concerned about that, and I say again I think we're a victim of our own success in integrating the female sex into the professional fields of this country, and I think we need to do something about that as a nation and as a state. We can do all we can to increase the quality of the teacher, but if we don't start out with a top-quality product, we're not going to end up with a top-quality product on the other end."

**Vice President for Academic Affairs Richard L. Wallace:** "Three impressions that I have: I think indeed there has been a remarkable change in the approach to content, and that came out in Mark's report. I think there's been some change, too, in the quality of students coming into the program."

"Maybe education as a major is in a resurgence, and there are now some of our very brightest students saying, 'Yes, I want to commit to that.' Part of it is attitude, part is the perception of the profession, part is simple economics. We're finally getting pay rates up in some of the metropolitan areas to a point where you can make a decent living as a public school teacher."

"It's my impression that all three programs concentrate on turning out not the average classroom teacher, but individuals to take leadership positions. And if I'm right in that, it's at least a partial response to the specialization. A very high percentage of the superintendents of public education systems in this state, I believe, are graduates of the University of Missouri. Many of the teachers take the positions of role models with other teachers within their systems. We are indeed making progress."

## UMSL triples undergraduate enrollment

In an interview after the board meeting, Donald W. Robinson, dean of education at UMSL, said undergraduate education enrollment there has tripled since 1982, from 305 to 900 students, and graduate enrollment has increased from 725 to 1,200.

Robinson, who also is past-president of the Association of Colleges and Schools of Education in State Universities and Land-Grant Colleges and Affiliated Private Universities, said deans across of the country are reporting 30 percent to 40 percent increases in enrollment.

However, UMSL "now prepares more educators and educational specialists than all of the other institutions in the St. Louis metropolitan area combined," Robinson said. "We're having a very definite impact on the quality of education in the St. Louis region."

He attributed increased enrollment to a:

- strong, national resurgence of interest in education as a career
- shift in values among college students back to the helping professions
- concerted effort among community leaders in the St. Louis metropolitan region to improve the quality of education
- renewed public attitude toward teaching as "a fine career"
- high level (95 percent) of job placement within the field after graduation, especially within the metropolitan area
- and UMSL's general accessibility and regional reputation for quality teacher education

"That's the good news," Robinson said. "The bad news is that we are at a point where increased enrollment without additional faculty is not viable, especially if we are to maintain quality programs and accreditation by the National Council for Accreditation of Teacher Education."

In all three UM System education programs, Robinson added, "the University contributes uniquely to the state in the field of education through research and by preparing teacher educators for other institutions of higher education in the state and nation."

# UMKC revises education curriculum

UMKC's School of Education is responding to the need for teacher competency through a new teacher-education program that represents the most significant revision in the school's curriculum in 30 years.

The new program, implemented last fall, focuses on improved subject-matter competency and field-based experience, according to Dean Donald Mocker. That means education students will be spending more time learning the subjects they'll teach and more time actually teaching them, Mocker said.

Starting with this year's freshmen, education students will complete a comprehensive arts and sciences program in addition to their education courses. Now, besides an education degree, elementary education majors will finish school with the coursework equivalent to a bachelor of liberal arts degree; prospective secondary-school teachers will graduate with degree equivalents in their subject area.

This classroom training also will be integrated with broad field experience. Each term, students will do practice-teaching that culminates in a final semester of student teaching.

The program is being monitored by the newly established Division of Teacher Education, which draws its staff from the Conservatory of Music, the College of Arts and Sciences and the School of Education. The three-part collaboration is the first of its kind at UMKC and unique in the Midwest.

Education Professor William C. Smith, who

chairs the new division, says the plan promises to improve the analytical and decision-making skills of education graduates and to increase the depth of their training.

"We're trying to prepare our students for a lifelong learning process and to give them the skills to communicate their knowledge with others," he says. "Now they can get the kind of preparation for

classroom teaching they need and deserve."

UMKC's new program comes at a time when school teachers are increasingly in demand. Experts estimate more than 1 million new teachers will be needed in the United States this year. But according to the National Center for Education Information, the number of teaching degrees awarded in 1985 was half what it was in 1975.

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### Alzheimer's grants available

The Board of Curators, based on the recommendation of the Alzheimer's Disease and Related Disorders Program Advisory Board, will award grants of up to \$20,000 per year to investigators who are employees or staff members of public or private educational, health care, voluntary health associations or research institutions.

During the 1987 legislative session, the General Assembly enacted the program to provide funds for research projects in Missouri that promote and advance knowledge in the area of Alzheimer's disease and related disorders. In anticipation of funds being allocated to this program during the current legislative session, the Alzheimer's Disease and Related Disorders Program Advisory Board is calling for proposals by July 25, 1990.

For application forms, contact: Sam Kanatzar,

coordinator of special projects, Office of the Vice President for Academic Affairs, 804 Clark Hall, University of Missouri System, Columbia, Mo. 65211.

### UMKC phone exchange changes

For the past two decades, every phone call to UMKC has started with the same three digits: "276." Now the University has outgrown this exchange, and a new one is being phased in: "235."

Both the old and the new exchange will operate for a year to give people time to get used to the new number, and to give University employees time to use up and reprint business cards and letterhead.

From now until spring 1991, callers can reach any extension at UMKC by dialing "276" or "235," and then the rest of the phone number, which remains the same.

**'It is clear that the bright, young women of the United States have underwritten the cost of American public education for decades. It should be clear to each of us that they will not do this in the decades ahead.'**

**Wilbur R. Miller**  
UMC education dean



(Bud Carlson photo)

**W**ilbur R. Miller, UMC dean of the College of Education, called for Board of Curators and University administration support for teacher education within the University System. He spoke at the March 23 board meeting.

"If we are to continue the important work that our mission dictates, we need the support of you on the Board of Curators and the administration of the University," he said. "We cannot be treated as stepchildren in the University enterprise. Our role is too important to the future of the state to be ignored or treated lightly."

Miller also said the observation by several board members that it has become more difficult to attract "high ability and high achieving young people into the profession of teaching is certainly accurate."

However, he added, "it is important for you, as curators of the University of Missouri System, to recognize the fact that the campuses with education programs are attracting, on an average, the most able candidates preparing to be teachers in Missouri."

The University is "bucking the national trend," he said. "Our teacher education candidates are sub-

stantially above the average of college students preparing to be the next generation of teachers."

There is strong competition for the best and brightest students, Miller said. With the increased career opportunities available to both females and minorities, the talent pool for teachers has been substantially reduced.

"It is clear that the bright, young women of the United States have underwritten the cost of American public education for decades. It should be clear to each of us that they will not do this in the decades ahead," Miller said.

Because the University of Missouri System attracts more high ability and high achieving young people into teacher education than any other institution in the state, it is important that the University continue to exert leadership in this important area of societal need, he added.

In addition to the preparation of teachers, Miller said the University's schools and colleges of education, like those of other land-grant and state universities, also are heavily invested in:

- professional development of education personnel, including teachers, counselors, principals, superintendents, school librarians and others

- providing service to local school districts, state agencies and professional organizations. The faculty of education in these types of institutions provide leadership at all levels of education
- functioning as the research and development arm for the education profession in the state. "No one makes an investment in research and development for professional education other than the land-grant colleges and state universities," Miller said.
- providing graduate-level teacher education and providing the scholarship for the other institutions that prepare teachers and other education professionals. "In essence, we provide the scholarship base, and we write the books that other professional educators use," he said.
- providing faculty and administrative leadership for the entire educational enterprise. "We are called upon frequently by the profession to provide our expertise as issues are studied and as policy decisions are made through the Missouri Board of Education and the Missouri Department of Elementary and Secondary Education," he said.
- "We need the support of all of you as we carry out these responsibilities," he concluded.

## Metropolitan location aids technology center



St. Louis Technology Center graduate students from area universities develop strategic plans for clients, based on market research and technology assessment. Clockwise, from left, they are: David Gensen, Washington University; Dan Appelbaum, UM-St. Louis; Jane Quartel, St. Louis University; and Alf Scherer, Washington University.

**By Karon Speckman**  
Special to *Spectrum*

*The following concludes a Spectrum series on the four incubation/innovation centers funded by Missouri and affiliated with the UM System.*

The St. Louis Technology Center has capitalized on its prime location in a city of 2.5 million with technology-based businesses such as McDonnell Douglas, Monsanto, Emerson and Southwestern Bell.

"We've seen roughly 460 people come to us with business concepts since we opened four years ago," says Gene Boesch, managing director of the center.

Those contacts have resulted in new technology-based companies creating 194 jobs with more than

\$4.8 million in salaries. This employment generated more than \$400,000 annually in state and local taxes.

Presently occupying 15,000 square feet, the center may develop a total of 45,000 to 50,000 square feet in three sites within the next year. These sites would include 15,000 to 20,000 square feet of lab space to serve the biotechnology and life sciences clients and 15,000 square feet of space designed for manufacturing technologies.

Leaving the nest and thriving on its own is the center's goal for a company assisted in its start-up stage. The first graduate of the center was System Integrators Inc., an electronic research and product development group. The company's products range from robotic software to micro-processor based systems for factory automation. The firm also provides product development support to small businesses

with a wide range of electronics technologies.

The firm opened in 1986 with two people, but now it employs nine engineers and technicians in a new 2,000 square foot facility at 234-D Old Meramec Station Road. Customers include medical instrumentation firms, utilities and others.

St. Louis Technology Center, a Missouri not-for-profit corporation, promotes the development of new businesses by providing low- or no-cost programs to emerging technology-based businesses. Client services fall in five general categories, Boesch says.

Those services include providing the traditional type of incubator services such as low-cost facilities and administrative support. Clients also receive direct management support with hands-on assistance in establishing sales and distribution systems. Other supporting services include assistance with product development and financing.

Companies that have profited from assistance include Gold Biotechnology Inc., which commercialized four products for genetic engineering research. The company came to St. Louis from New Jersey to take advantage of the center's low cost facilities and business support programs. Another firm moving to St. Louis from out of state was Argus Systems Inc., a law enforcement software company.

Hemagen Inc., which developed a blood substitute for use in emergency treatment, cancer therapy, heart failure and organ transplants, used the center's product development support to foster its growth. Other assisted companies include ones that specialize in solid state laser and power packs, health assessment analyses, metal alloys, office automation and electronic mail software, and industrial waste management services.

Boesch says clients generally fall into two categories. Some come to the center at the time they've developed the concept -- looking for early stage advice. Other prospective clients have developed prototypes or working models and are eager to get their products into the marketplace.

"They often don't know where to begin, or they

(Continued on back cover)

# Claims volume baffles administrators

*"We don't know what's happening. Have people been sicker?"*

Staff members in the UM System faculty and staff benefits office, like the above-quoted manager, Ron Monroe, continue to be perplexed by the deluge of University employee health claims being sent to Lincoln National Administrative Services Corp.

Although Lincoln hoped to reduce claims to a manageable number (approximately 5,000) by March 31, the new projected deadline is May 15. (An unofficial report at press time

shows the backlog down to 6,000.)

At its peak, reported on March 30, the claims backlog was 19,932 for a UM System clientele of 12,500 employees. As of April 13, the claims backlog had been reduced to 11,214, as Lincoln continued to add staff to handle the influx.

"Lincoln has doubled the number of people working on our claims to address the situation," said Michael J. Paden, UM System director of faculty and staff benefits. "We are confident it will be controlled."

In the meantime, the question, "Why are claims up so high?" remains

unanswered.

"Lincoln has received 89,257 claims in the first 15 weeks of the year," Monroe reported. "Projecting this to an annualized basis indicates that the claim count for 1990 will exceed 300,000."

By comparison, the totals for the past three years: 1987 -- 213,256; 1988 -- 231,510; and 1989 -- 239,825. Seen another way, the claims volume has increased by more than 1,000 claims a week in 1990 as compared with 1989 activity.

Lincoln succeeds Provident Life this year as the University's medical insurance plan administrator.

# Center's success stems from business services

*(Continued from page 3)*

are trying to raise money. Or they recognize an important void in their business. They are all very strong in their technology knowledge, and we assume that they can make the technology work," Boesch says. "But it's too much to expect success unless there is some driving force behind the product."

He adds: "Those people who don't have that driving force expect someone else to capitalize, to manage, to develop, to sell -- and they want a check. They also say they want to control the business -- all symptoms of a business that's not going anywhere."

The success of technology-based businesses started at the center is dependent on the high level of business services offered by its Business

Development Group. That group includes individuals who average 30 or more years of technology experience in operations management, marketing, sales, technology transfer or market development work.

The development group is staffed by two full-time people, one a commercial development specialist who handles most of the marketing and market research and the other a financial adviser. Five graduate students also are part of the group. They are either master of business administration degree candidates with a marketing or finance specialty or candidates for a master's in technology management.

Funded by the state, the center works with six educational institu-

tions -- St. Louis Community College, St. Louis University, UM-St. Louis, the UM System, Washington University and Southern Illinois University-Edwardsville.

The center is part of the Hi-Tech Plan for St. Louis developed by the St. Louis Regional Commerce and Growth Association.

Its goals are to position St. Louis as a leading center for development of new technology-based businesses and to create more than 5,000 new jobs within a decade.

Boesch is an attorney and an electrical engineer.

The St. Louis Technology Center is located at 10143 Paget Drive, P.O. Box 12405, St. Louis, Mo. 63132; phone (314) 432-4204.

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