

Difficulty meeting salary goals

Magrath reports on long-range plan

Failure to achieve salary objectives outlined in the University's long-range plan was cited by UM President C. Peter Magrath as the greatest disappointment in the first two years of the plan's implementation. Magrath reported on the plan's progress at last week's Board of Curators meeting.

"In 1985-86, we gained about 1.5 percent on the Big Eight average and, with the third highest percentage increase for 1986-87, we are sure to make further progress this year," Magrath said. "Nevertheless, we are all concerned about the reasons for our difficulty in achieving the salary objectives and in developing strategies for doing better."

Review of the plan's financial status offers some explanation for the difficulty in meeting salary objectives. Although revenue for the plan's implementation compares favorably with projected revenues, it has not kept pace with needed expenditures. Magrath said the deficit is a result of several factors, including a low cost estimate that included only expenditures for eminence programs. Money received from the General Assembly for targeted investments can be spent only on those programs; targeted funds cannot be used for general salary improvements.

"To make more rapid progress on the salary objectives will require one of three things—more reallocation, a change in expenditure patterns and/or more substantial increases in revenues," Magrath said.

UM has reallocated almost \$9.6 million during the first two years of the plan, funds that have provided more than half of the \$16.3 million increase in expenditures needed to meet the plan's objectives. Magrath recommended UM continue to reallocate at the rate of 1 percent to 1.5 percent in the coming year.

"Our experience indicates this is a realistic rate of reallocation," he said. "Anything more would require elimination of substantial and needed programs, which would not be in the best interest of the state. Reallocation above that range would also, I am firmly convinced, be destructive of internal morale and work counter to our efforts to increase faculty productivity and the attainment of grants and contracts."

Magrath noted the current Board of

Curators policy calling for student fee increases equivalent to the rate of increase in the Higher Education Price Index. "We do not believe this recently adopted board policy should be changed," Magrath said. "We can also increase revenues through additional grants, contracts and gifts, and we are making a concerted effort to do so."

"Our only real hope for significantly increased revenues for achievement of the salary objectives is to demonstrate to the state and the General Assembly that the University of Missouri is 'under capitalized'—that there are substantial investment opportunities within the University which would pay very high dividends to the state."

"However, in the effort to make our case, we must recognize the state is limited by its present tax structure. A part of our effort must be devoted to convincing the people of the state that investments in education are worth supporting. We have been working with the other public and private institutions in the state toward this objective."

Magrath said there is a need to convince the General Assembly and the Coordinating Board for Higher Education of the link between competitive salaries and high-quality programs. "For each of the past three years, our appropriations requests have included amounts not only for inflationary adjustments to salaries, but for salary improvements as well. They have been, in our view, reasonable and supportable. Along with inflationary adjustments, they have been included as a part of the University's No. 1 budget priority."

Outlining major accomplishments of the first two years of the plan, Magrath cited a budgeting process guided by a sharper focus on the University's priorities and objectives. "We have closed the gap between planning and action," Magrath said, "and our resource allocation decisions reflect that reality."

Other accomplishments include development of a new student fee policy, improved scholarship opportunities and extensive new programs to improve the writing and thinking skills of students. Magrath also noted improvement in library facilities and computing services and UM's effort to link the four campuses via the new telecommunications network.

Research achievements include research park development on the UM-Kansas City campus and in St. Charles County near St. Louis. Funding for sponsored research activities increased from \$30.3 million in fiscal year 1985 to \$34.3 million in fiscal year 1986, a one-year increase of 13.2 percent. Continued progress at that rate, Magrath said, should allow UM to reach its goal of doubling sponsored research funding by 1990. Funding for sponsored activity other than research increased from \$23.9 million in fiscal year 1985 to \$27 million in fiscal year 1986, an increase of 13 percent.

Private giving increased by 22.3 percent from \$20.8 million in fiscal year 1985 to \$25.5 million in fiscal year 1986. If the present rate of increase is sustained, Magrath said, UM will double private giving by 1990.

Magrath noted the University's extension programs have been reviewed, and new program priorities and objectives are helping extension programs respond to the state's economic and educational needs.

"Substantial assistance from the Missouri General Assembly has helped the University increase annual expenditures on eminence and enhancement programs by more than \$10 million," Magrath said. These programs include Food for the 21st Century, molecular biology, basic life sciences, intelligent manufacturing systems and materials engineering and science.

"Even though we identify these expenditures as related to program objectives in the long-range plan," Magrath said, "they contribute substantially to the achievement of many other objectives—improvement of faculty and staff salaries, more competitive stipends for research assistants, better equipment and our ability to meet the research objectives of the plan."

The greatest challenges for the coming year, according to Magrath, are to improve the planning and budgeting process by involving faculty, staff and the Board of Curators; find ways to achieve salary objectives; continue to improve and evaluate undergraduate programs; and move some support services from central administration to the campuses to reduce administrative costs.

measure their progress between their freshmen and senior years. At UMKC, arts and sciences students are currently required to take writing courses in their sophomore and junior years.

• A value added assessment model at UM-St. Louis, where mathematics requirements have already been increased.

A freshman engineering program requiring a sequence of courses to match student abilities to engineering disciplines is already in place at UM-Rolla.

(Continued inside)

Board elects Bates president

The Board of Curators has elected W.H. (Bert) Bates of Kansas City president for 1987. He has served as vice president of the board for the past year. Bates succeeds Tom K. Smith Jr. of Ladue, whose term on the board expires Jan. 1.

Bates was appointed to the board in January 1983 and has served as chairman of the Long-Range Planning Committee and as a member of the Physical Facilities Committee. His term on the board expires Jan. 1, 1989.

Bates, an attorney, is the son of former Missouri State Treasurer George Hubert Bates. He received his bachelor's degree from UM-Columbia in 1949 and his law degree from the University of Michigan in 1952.



W.H. (Bert) Bates

A former member of the Board of Governors of the Missouri Bar, Bates is active in numerous legal and civic affiliations. He is a member of the board and executive committee of the Kansas City Bar Association and is general counsel for the Chamber of Commerce for a Greater Kansas City. Bates has served as president of the Kansas City Bar Foundation and as a special assistant attorney general of Missouri from 1952 to 1960.

Bates is a member of the Board of Trustees of the University of Kansas City and is a member of the Board of Directors and a member and former chairman of the executive committee for the Missouri State Chamber of Commerce. For 12 years he served on the Board of Curators and executive committee of Central Methodist College in Fayette.

Bates served in the Army in the European Theater during World War II and remained in active reserve for eight years following his discharge. He is the recipient of the Beta "Man of the Year" award for 1984-85 and received the 1986 Distinguished Service Award from the Kansas City YMCA and International Management Council.

Elected vice president was Jeanne Epple of Columbia, who was appointed to the board in January 1983.

Board adopts policy on educational assessment

The UM Board of Curators at its meeting last week adopted a University policy for assessing general education progress of all undergraduate students on its four campuses.

UM President C. Peter Magrath suggests the plans be implemented during the next academic year.

"Undergraduate student instruction is one of our primary missions," Magrath said. "It is also clear that more attention to the undergraduate programs at all of our nation's colleges and universities is a matter of increasing national priorities and public interest."

"Each campus should have its own program, preferably including use of a nationally normed test," Magrath said. "This can usefully supplement our current initiatives in better assessing our students' overall progress and needs."

Magrath noted the University's effort to raise its admission standards to require more high school courses in math, English and the sciences.

"We already have good students," Magrath said. "Using one partial measure, the ACT entrance test, students at three of our campuses already have the highest test scores among the public colleges. But, we want our good students to be even better."

The proposal included:

• Special emphasis on writing improvement programs at UM-Columbia and UM-Kansas City. Faculty at UMC have implemented a Writing Across the Curriculum program, which this fall began requiring all undergraduates to take an intensive writing class their sophomore year. A faculty group has recommended techniques to evaluate the writing and thinking skills of students to help

UMKC program helps disabled throughout the state

In the Health Sciences Building on UM-Kansas City's Hospital Hill people are breaking down barriers.

There and throughout the state, staff members from UMKC's Institute for Human Development, under the leadership of Carl Calkins, institute director, are helping developmentally disabled individuals, and the agencies that serve them, improve their quality of life.

Created from the merger of the University Affiliated Facility for Developmental Disabilities and the Education Program, the IHD "program without walls" focuses its efforts in research, interdisciplinary training, exemplary services and information dissemination in the area of developmental disabilities. These activities address the needs of the developmental disabilities service system across the state.

Most developmental disabilities are classified under one of four major headings — mental retardation, epilepsy, cerebral palsy and autism. Persons with mental retardation comprise the largest percentage of clients. Other functional disabilities may also make an individual eligible for services under the federal Developmental Disabilities Act.

That legislation also set forth the goals to integrate developmentally disabled persons into the community. State legislation followed, outlining programs to meet those goals, and University Affiliated Facilities were developed. The Institute for Human Development grew from that with a mission "to improve the quality of life of developmentally disabled persons across the entire age span."

Frank Neff, co-director of the institute, says one of its goals is to strengthen the state service system for the developmentally disabled. "We feel it's important to do things that not only deal with an individual or a particular problem, but also things that enable a system to become more effective on its own," Neff says.

'The implication is, given the right facilities in the communities and the right configuration of people and client needs, that we could care for many clients in community placement who we thought needed to be in habilitation centers.'

—Neff

The institute deals principally with two types of clients — the primary consumers, those who are developmentally disabled and who seek the institute's help for specific, more personal needs, and service providers.

Jerry Cohen, assistant director of the institute and coordinator of advocacy programs, says, "We have organizations locally and across the state that work with us on resolving problems. Often they need resources within the University.

"Other consumers include the Division of Mental Retardation and Developmental Disabilities in the Department of Mental Health. Our role is to be a facilitator on the cutting edge of both policy formation and service delivery."

Helping the Helpers

Since its inception, the IHD has been involved in many training activities across the state. One included the development of materials on respite care — giving the caregivers of a disabled person a break from the routine.

"One of the major needs we discovered was that families that had a developmentally



The UMKC Institute for Human Development's preschool project helps moderately and severely handicapped children interact with their non-handicapped peers. The project relies heavily on volunteers from the community.

disabled member needed some opportunity to get away for a time," Neff says. "The materials describe a way to provide a respite care system. We learned that just having training materials and sessions doesn't do it. You need a system that people can contact. You have to identify the people who want it and those willing to provide it. The research we have done indicates it does make a difference for the family that has respite care."

At the same time the respite care program was beginning, other needs in the system became apparent. A cataloging of services and people was needed. Staff developed the Residential Placement Study and obtained funding for it from the Missouri Institute of Psychiatry, an agency that works through the medical school at UM-Columbia and supports a major installation in St. Louis.

"The study lasted three years," Neff says. "We collected data from residential placement settings around the state. One interesting finding was the identification of clients with similar needs in both community and institutional settings.

"The implication is, given the right facilities in the communities and the right configuration of people and client needs, that we could care for many clients in community placement who we thought needed to be in habilitation centers. This is not to say we don't need the centers for certain clients, but it was an interesting finding."

Another major project concerned case management. According to Neff, a need existed to determine whether clients were receiving comprehensive and necessary services and whether clients were being moved through the system as they should.

"The state decided it wanted a case management system, including a case manager for every client, to ensure that the right things happened for that client," Neff says. "We worked for several years to identify what should happen at intake, during assessment, in developing an individual program, to provide service and promote advocacy."

The institute's work resulted in a system now followed by agencies that oversee or provide services for the developmentally disabled.

Removing the Age Barrier

Phyllis Kultgen is research associate

and coordinator of aging programs for the institute. Under her direction, a major research project was launched to identify the needs of the elderly developmentally disabled and to assess what was being done to guarantee them a social support system.

After case management was introduced in Missouri, according to Kultgen, concern grew about programming and services for the elderly. The Residential Placement Study indicated much more needed to be done to address the special needs of the elderly disabled population.

"A proposal was written in 1984 to look at how well case management was working with the elderly," Kultgen says. "We needed to know whether the written plans for daily living reflected a sensitivity to age-related changes and whether case managers were aware of the aging process.

"The second component was to look at the social support network of older clients. Since we know support networks for the elderly are diminished through a number of losses, we needed to know what was being done to maintain or increase their social support networks."

'Individuals with disabilities can learn to speak for themselves. . . They want to know what their rights are in the 'real world'. . . They realize there are things they can do as a group to advocate for themselves, but they need to know how to function in an organization.'

—Cohen

Kultgen and others developed a training manual to address changes for elderly persons and how those changes apply specifically to the developmentally disabled elderly.

"We trained case managers in the use of the manual, providing training at three sites across the state," Kultgen says. "We studied the plans for daily living before the educational process began and then rated them again after the training. I feel we were successful in improving their plans, making them more age-sensitive."

In the second component of the study, procedures were developed to match older developmentally disabled, primarily persons with mental retardation, with an age peer from the general population. Volunteers were found in a number of locations, including senior centers.

"We feel we were successful in increasing social networks," Kultgen says. "One of the measures we used was to ask people before they had the companion to name their friends. Afterward we asked them to name their friends again, and about two-thirds of them mentioned this individual they saw two or three times a week at the center. These people took an interest in them.

"One happy result was that we have received funding on a dissemination grant to allow us to share our findings and techniques with others."

People First

Cohen directs the People First program. Its objective is to teach skills the handicapped need to advocate for themselves.

"Individuals with disabilities can learn to speak for themselves," Cohen says. "Part of it is breaking down the mind-set of individuals who had been in some kind of controlled setting. They want to know what their rights are in the 'real' world. Once that happens, they want to know how they can coalesce into a group. They realize there are things they can do as a group to advocate for themselves, but they need to know how to function in an organization."

The People First movement began in the late 1970s. "Our staff became involved because providers and residents of group homes began to wonder if such an organization was feasible in this area," Cohen says. "It sounded alien to many residents.

"But for about four years now the institute has been involved in providing support, facilities and space. The group's meetings were originally held here at the institute, and we offered materials and staff time."

The People First program has grown from a small group of residents from one group home into several groups from Independence, Liberty, North Kansas City and Kansas City. Approximately 40 people participate. The groups have conducted training programs in Hillsboro and St. Louis.

"We've been learning about basic human and legal rights, and how to educate the general public and service providers about what it's like to be disabled and what kinds of changes are needed to survive basic issues like unemployment," Cohen says. "One basic concern of our members is getting a 'real' job, one that is not at a sub-minimal wage level of a sheltered workshop or considered of low esteem. Members have learned to organize their own meetings, conduct training programs, and to share information among themselves. People First is, therefore, also a peer support group."

Funding from the Missouri Protection of Advocacy Services has helped the People First efforts by providing dollars for training materials.

"Our past president has recently been appointed to the board of Protection of Advocacy Services," Cohen says. "Two other group members are also active members of local chapters of the Association for Retarded Citizens."

Benefits of People First also extend to the student population at UMKC. Cohen says the program has involved students from various disciplines and has given them experience with the group as advisers or sounding boards. The program also provides some students with their practicum or internship experience for their degree.

Board approves assessment policy

(Continued from front)

The newly adopted policy will help achieve the long-range planning goal of constantly assessing in order to improve the University's undergraduate educational programs. The policy includes:

- Formulation and implementation of a comprehensive plan on each of the four campuses to gather data about the general education progress of undergraduate students.
- Special emphasis on the writing improvement program currently being implemented.
- A report from the UMC team that has recommended a proposal for assessing prog-

ress in writing and critical thinking skills made by students between their freshman and senior years.

Basic principles of the policy indicate the University will continue to build from current procedures to establish student assessment programs. Faculty will play a key role in the design and use of evaluation methods, and involvement of students, employers and alumni in assessment planning will be necessary for useful outcomes.

Assessment results will be published and made available to students, faculty and the public.

UM faculty receive RAA funding

The UM Board of Curators has approved funding for 20 UM projects under terms of the Missouri Research Assistance Act.

Under the guidelines of the MRAA legislation of 1982, which were revised during the last General Assembly, the state provides funding for up to one-third of a research project's costs, and two-thirds or more is supplied by non-state and non-federal sources.

For projects in which a small business provides matching funds, state funds can be used for up to two-thirds of the project's cost.

Further changes removed the restriction on the categories of research eligible for MRAA funding. Research categories previously had been limited to agriculture, natural resource management, industrial processing and information processing. Under the new guidelines, any research project that will promote the economic development of Missouri is eligible for MRAA funding.

The state's portion of funding for these projects is \$536,140. Private sources are committed to supplying the other \$1 million.

The MRAA Steering Committee is composed of representatives of the eligible university, industry and the legislature. All MRAA proposals are externally reviewed by scientists in the discipline of the project. The MRAA steering committee then chooses projects to be recommended to the board. The current members of the steering committee are Wayne Goode, Missouri senator; Allen D. Holiday, vice president, Farmland Industries Inc.; Thomas H. Laferre, vice president, Monsanto; Marvin D. Marks, vice president (retired), McDonnell Douglas; Emery C. Turner, dean of St. Louis University's School of Business; Bob G. Volk, chairman, Department of Agronomy, UM-Columbia; Robert W. Murray, curator's professor of chemistry, UM-St. Louis; John T. Park, vice chancellor for academic affairs, UM-Rolla; Eleanor B. Schwartz, interim vice chancellor for academic affairs, UM-Kansas City; and W. Maxwell Cowan, provost, Washington University. George A. Russell, UMKC chancellor for academic affairs, UM-Rolla Eleanor B. Schwartz, interim vice chancellor academic affairs, serves as secretary.

This funding cycle's total project amounts, investigators and project titles are:

• \$12,900 to R.L. Belyea, animal science, UMC, "Nutritional Value of By-product Feeds: Soybean Hulls."

• \$25,790 to Harvest Collier, chemistry, UMR, "Development of a Controlled Release System for Non-Toxic Marine Antifouling Coatings."

• \$45,270 to C. Dale Elifrits, mining, UMR, "Aggregate Resource Mapping and

Evaluation — Glaciated, Aggregate Short Areas of North Missouri."

• \$21,000 to Roger Hanson, agronomy, UMC, "Chlorine and Potassium Nutrition of Soybeans as Related to Genetic Resistance to the Cyst Nematode."

• \$589,230 to Marilyn Harrington, dentistry, UMKC, "Medical/Dental Research Data Base."

• \$53,531 to Y.C. Jerry Jean, physics, UMKC, "Microstructural Properties of Polymers Studied by Positron Annihilation Spectroscopy."

• \$9,876 to James Johnson, entomology, UMC, "Insect Management in Missouri Apple Orchards."

• \$75,000 to M. Thomas Jones, chemistry, UMSL, "The Synthesis and the Study of the Electrical, Electronic, Magnetic and Physical Properties of Low-Dimensional Synthetic Metals."

• \$55,140 to Henry Liu, civil engineering, UMC, "Freight Pipeline Research."

• \$16,500 to S.K. Loyalka, nuclear engineering, UMC, "Aerosol Reactors for Materials Manufacturing."

• \$71,709 to William Miller, nuclear engineering, UMC, "Development of a Predictive Strength Model for the Final Design Phase of a Prototype, CAT System for Utility Pole Inspection."

• \$16,710 to Randy Moss, electrical engineering, UMR, "Interfacing of a Car Buffing Machine to a Microcomputer System."

• \$82,100 to Raymond Myers, optometry, UMSL, "Independent, Generic Contact Lens Research Project."

• \$53,025 to J.A. Paterson, animal science, UMC, "Characterization of Digesta Particles and Rumen Fermentation in Cattle Fed Mixtures of Alfalfa and Orchardgrass Hay."

• \$248,458 to William Stewart Jr., engineering, UMC, "Next Generation of Grain Storage Bins."

• \$38,174 to J.M. Vandepopuliere, animal science, UMC, "Effect of Coccidia Vaccination and Litter Type on Growth of Market Turkeys and Use of Turkey Litter as a Pasture Fertilizer."

• \$37,500 to Trygve Veum, animal science, UMC, "Bioavailability of Zinc in Nonfat Dry Milk, Yogurt and Soybean Protein."

• \$85,660 to Judy Wall, biochemistry, UMC, "Ammonium Transport in *Bradyrhizobium Japonicum* Bacteroids and Free-Living Bacteria."

• \$65,131 to Ralph Wilkerson, computer science, UMR, "Automated Diagnosis Using First Order Logic."

• \$12,000 to George Zobrist, computer science, UMR, "Real-Time Simulation Using Mission Software."



UMSL has land-grant mission in metropolitan setting

As part of the University's long-range planning process, each campus is developing a mission statement to accompany UM's mission statement, which was approved by the Board of Curators in February 1984. The UM-St. Louis statement is the fourth of the campus mission statements to be approved by the board.

The statement:

As one of the four campuses comprising the University of Missouri, the University of Missouri-St. Louis has served the citizens of the St. Louis metropolitan area since 1963. It shares the University's land-grant tradition and is committed to research and public service. The productive scholars on the campus' faculty contribute significantly to the theoretical and applied research in their fields. The campus' business, chemistry, political science and metropolitan studies programs are already internationally recognized. As it develops, the campus will support other centers of excellence in departments or clusters of departments as the quality of scholarship achieves consistent international recognition.

In addition to its role to advance knowledge as part of a comprehensive research university, the University of Missouri-St. Louis has a special mission determined by its urban location and its shared land-grant tradition. It works in partnership with other key community institutions to help the St. Louis region progress and prosper.

Through its seven schools and colleges, the campus provides opportunities for all the people of the metropolitan area, including the economically disadvantaged, to receive high quality and accessible liberal arts, career, professional and graduate education.

Through a careful melding of strengths in scholarly research, teaching and community service, the University of Missouri-St. Louis plays a leadership role in advancing scholarship; providing quality undergraduate, graduate and professional instruction to the large and diverse numbers of students in the St. Louis area; and contributing to economic development throughout the state and region.

In shaping and evaluating its undergraduate curriculum, the University of Missouri-St. Louis fosters intellectual independence, sound judgment, clarity of expression in writing, aesthetic refinement and sharpened analytical skills. The campus provides high quality undergraduate, graduate and professional instruction to an ethnically, racially and economically diverse student body. Special efforts are made to fulfill the University's land-grant mandate to serve the working people of the state and, because most of the campus' graduates remain in the metropolitan area, to enhance the economic development and quality of life of the metropolitan area and the state.

These research, instructional, economic development and community service missions are accomplished by on-campus and extension programs in the schools and colleges of Arts and Sciences, Business, Education, Nursing and Optometry, as well as the Evening College and the Division of Continuing Education-Extension. In addition, the campus' humanities, fine arts and performing arts programs enrich the cultural life of the metropolitan area.

The University of Missouri-St. Louis will work vigorously to achieve equal opportunity for all within the campus community through a strong affirmative action program.

Board approves benefit changes

UM employees will see some changes in the provisions of three employee benefits plans in 1987. The Board of Curators approved the amendments at its meeting last week.

In the medical and dental benefits plans, the definition of "dependent" has been clarified to ensure consistency among those dependents receiving benefits.

• The amendments clearly define the treatment of adopted children, foster children and situations of legal guardianship. Coverage is extended to natural children, legally adopted children and children who live with an employee in a normal parent-child relationship and are either stepchildren or foster children. Documentation may be required in some cases.

Foster children are children related to the employee or the employee's spouse by blood or marriage or children for whom the employee or the employee's spouse has assumed legal duty. Such children must live with the employee in a parent-child relationship and must be claimed dependents on the employee's federal income tax form.

• The amendments also define the term for spouses' "dependent support" resulting from legal separation or divorce in determining coverage eligibility. Coverage is extended to the spouse of an employee, excluding a divorced spouse or legally separated spouse, and to the surviving spouse of a deceased employee, also excluding a divorced or legally separated spouse.

In those cases where a surviving spouse who is entitled to coverage marries a retired employee, the surviving spouse will forfeit benefits as a result of the previous marriage but will immediately be entitled to benefits based on the benefits the retired employee is entitled to receive.

• The amendments state eligible dependents must be able to meet the standards required in determining dependent status under the U.S. Internal Revenue Code.

Changes in the provisions of the retirement, disability and death benefit plan deal with mandatory retirement.

President Reagan recently signed into law amendments to the Age Discrimination in Employment Act with which the University must comply by Jan. 1. The law no longer permits a mandatory retirement age, except for firefighters, law enforcement officers and tenured faculty. The plan's amendment puts the University in compliance with the law and will continue to require retirement for tenured faculty and law enforcement officers at age 70.

In addition, changes that affect graduate research and teaching assistants will be made to the University's Educational Assistance Program.

The board took action to include graduate research and teaching assistants in the Educational Assistance Program. By doing so, income that goes to educational and course-related fees, as well as certain educational expenses, will not be taxable. There would be no change in the amount of salary or stipend paid to the research or teaching assistants. However, research assistants' pay above the designated costs will have to be declared as income.

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UM plays role in state's economic development

"The greatest resource the state of Missouri has is the University of Missouri," Dennis Roedemeier, president of the Cuba, Mo., Industrial Development Authority, told the Board of Curators last week in a progress report on the University's role in fostering economic development in the state.

The report includes the economic possibilities generated by the University through the Missouri Research Assistance Act and applications of technology transfer between University research and business and industry.

The 1982 Research Assistance Act is designed to fund research and applied projects to enhance employment opportunities, stimulate economic development and encourage private investment. According to the act's provisions, the state provides no more than one-third of a project's cost, and the remaining two-thirds or more is provided by non-state and non-federal sources. The Missouri Research Assistance Act has provided \$3.3 million in released and committed state funds to more than 100 projects since its inception in 1982.

Roedemeier said the presence of the University is a tremendous help in enticing businesses to relocate in Missouri. "We got eight out of 13 industries to come to the Cuba area because of the University. We expect to lure three more there for the same reason," Roedemeier said.

According to Roedemeier, who has worked primarily with UM-Rolla, the technology transfer applications available to industries from University research attract companies to Missouri. "By working with University researchers, businessmen assure themselves of being competitive in the marketplace. The high-quality research available ensures superior product development as well as the quality and integrity of the product," Roedemeier said.

Roedemeier described technology transfer as it has aided Cuba, pointing out that in a typical situation industry funds research at the University, faculty and staff work on the problem and industry incorporates the results into its product.

"Because the technology transfer process is so basic and simple, it works well. From the University, industry is able to obtain the use of specialized equipment, complex technology and the skills and knowledge of research people who are experts in their area," Roedemeier said.

In discussing the success of the Missouri Research Assistance Act, Wynn Volkert, professor of radiology at UM-Columbia, told the board he expects Food and Drug Administration approval this month for human testing of a drug (Sm-153-EDTMP) to treat bone cancer. The drug will be tested under the direction of Richard Holmes, UMC professor of radiology and medicine and chief of nuclear medicine at the Harry S. Truman Veterans Administration Hospital.

'By working with University researchers, businessmen assure themselves of being competitive in the marketplace. . . From the University, industry is able to obtain the use of specialized equipment, complex technology and the skills and knowledge of research people who are experts in their area.'

—Roedemeier

"We have made significant progress in our research in the last 18 months. Funding from the Missouri Research Assistance Act and Dow Chemical Co. has provided the long-term, sustained commitment needed to succeed. We feel we are very close at this time," Volkert said.

According to Volkert, if the drug is successful in treating bone cancer in humans, Dow Chemical would market it. Under an agreement signed with Dow last year, Sm-153 will be produced at the University research reactor and will result in more jobs through

its production and distribution. Also, Dow would have to make a decision on building or leasing facilities in Missouri to manufacture or market the product.

Discussing another MRAA research project, Marilyn Harrington, director of planning in the School of Dentistry at UMKC, reported to the board about the medical/dental research data base being established at UMKC in collaboration with Argus Computing Inc., a Kansas City firm that specializes in state of the art, on-line health care data systems and is the private sponsor of the project.

James E. Judge, Argus president, told the board that the data bases being developed with the help of UMKC researchers will play a valuable role in the delivery of cost-efficient health care to hospitals, ambulance services and medical institutions in Kansas City and nationally.

Harrington described the data base as a collaborative project to increase health-related research and health data management capabilities. Because of the grant-related activities, UMKC and its affiliated hospitals will become a primary center for clinical research, and Argus Computing Inc. will be known as a regional and national health data management organization, Harrington said.

"Our collective data base is composed of an injury surveillance system, a dental data system, a drug surveillance system and a patient surveillance system. Next year, in addition to adding to the size of the data base and initiating other research projects, we will publicly share data results and promote the availability of the system to other health care research and delivery institutions," Harrington said.

Harrington noted that the research generated 12 new jobs and the non-government sponsor, Argus Computing Inc., has grown significantly. "The Missouri Research Assistance Act has allowed us to pursue research that has opened up many doors for federal contracts and private industry funding in Kansas City and the state of Missouri," Harrington said.

Jobs

The following administrative/professional and academic vacancies were listed with *Spectrum* as of Dec. 12. Anyone interested in a position should contact the appropriate department or personnel office.

UMC: assoc. dean/director of resident instruction, agriculture dean's office; vice provost, extension; instructor, child and family development; asst./assoc. professor of economics/director of Missouri Council on Economic Education; asst. professor, extension education/agricultural editor's office, family and community medicine, communication, public administration; asst./assoc. professor, surgery, electrical and computer engineering, computer science, health and physical education, pulmonary medicine, psychology, radiology, economics (2), physics and astronomy, art (graphic design), social work; instructor/asst./assoc. professor, business administration; asst./assoc./full professor, mechanical and aerospace engineering, electrical/computer engineering (2); professor and department chair, educational and counseling psychology; instructor/asst./assoc./full professor, nursing (3); postdoctoral research fellow, biological sciences, biological sciences/medicine; clinical instructor/emergency room physician, surgery/emergency center; assoc./full professor, biological sciences (2); research specialist (2); director, development fund; spectrometrist; administrative associate I; academic adviser; asst. director, energy management-campus facilities; director, procurement/materials control-purchasing; chief engineer, KOMU-

TV; asst. director, Memorial Union/Brady Commons; radio producer, FM station; learning resource specialist, campus writing program; police officer, university police; sr. continuing education coordinator, continuing medical education; asst. supervisor, custodial services; coordinator, facilities and analysis; editorial assistant I; computer programmer/analyst I (3); foreman, agriculture; management analyst, facilities management; sales manager, KOMU-TV; sales representative, KOMU-TV. **UM:** assistant to the president for development; computer programmer/analyst II; research scientist, research reactor; manager, reactor health physics; supervisor, veterinary medicine laboratory/veterinary diagnostic laboratory.

UMCHC: asst. division director, marketing; asst. manager, medical records/utilization review; supervisor, sterile processing, materials management; physical therapist; manager, surgery services, hospital accounting, sterile processing/distribution, pathology technical/administrative services; sr. pharmacist; learning specialist; therapeutic recreation specialist; staff pharmacist; risk/liability coordinator; computer programmer/analyst I.

UMKC: director, Advanced Education Program in General Dentistry and asst./assoc. professor, dentistry; asst./assoc. professor, dental hygiene, oral diagnosis (2), periodontics, pediatric dentistry, neurophysiology, accounting; asst. dean, School of Business and Public Administration; professor, adult medicine/geriatrics; professor and chair, de-

partment of behavioral sciences, department of oral biology, pediatric dentistry; visiting professor, theater; asst. professor, mathematics, pharmacology; instructor/asst. professor, communication studies; research associate, Institute for Human Development; theater assistant (10); visiting research associate, physics; lecturer, anthropology, arts/sciences continuing education (foreign language), basic life sciences, administration of justice, history, earth science, geology, psychology, Chinese, public administration, computer science; assoc./full professor, music education, pharmacy; adjunct faculty, biology; clinical faculty, dentistry; visiting asst./assoc./full professor, computer science; asst./assoc./full professor, computer science; research aide, Institute for Human Development (2); docent team assistant; computer programmer/analyst I.

UMR: coordinator, alumni admissions activities.

UMSL: asst. professor, history (2), industrial/organizational psychology, administration of justice, industrial psychology, optometry (2), statistics, behavioral studies, behavioral management (2); asst./assoc. prof., computer science; assoc. professor, optometry; asst./assoc./full professor, accounting, finance, management science/information systems; radio program director; chief broadcast engineer; research assistant/research analyst, optometry; asst. to vice chancellor for student affairs.