

Curator is first-generation college grad

Curator Jim Sterling was the first of the Sterling children to graduate from college. Giving that opportunity to all Missourians makes serving on the Board of Curators a mission.

"It's one of the things that drives me. Each generation wants its kids to have better success and more opportunities."

He says that families with three or four generations of success and college may not see the great need for a public university. But Sterling still believes the University of Missouri System is the opportunity ticket for many people.

"I see it today — not just for kids that grew up in rural Missouri like I did, but also city kids and children from minority families. Families are families. All parents care deeply about their children and their chance for opportunity."

One curatorial responsibility that makes Sterling realize the importance of a college education is attending University graduations. He says attending those commencements is one of the things he enjoys most about being a curator.

"This is one of the great days in the graduates' lives. Their families and friends come, they

walk across the platform, you hand them the diploma and people stand up and cheer. It's just such a great time, such an up feeling to be with people at graduation," he says.

"These are the products. Delightful products. I have a sense that many of these graduates still today are first-generation graduates, and I feel good too because I was the first in my family to graduate from college."

Martin Luther King committee established, holds first meeting

A committee formed to consider ways the University can continue to recognize Martin Luther King Jr. met for the first time Nov. 9 in Columbia. President C. Peter Magrath met with the systemwide Martin Luther King Jr. Holiday Advisory Committee to discuss its charge.

The committee of faculty, staff and students was named by Magrath to make recommendations about observances of King's birthday.

Mark Burkholder, UM System associate vice president for academic affairs, chairs the committee.

Other members of the committee:

UM-Columbia: Carolyn Dorsey, professor of higher and adult education; Suzanne Schoonover, administrative assistant, agricultural engineering; Scott Esserman, student; Andrea Monroe, student.

UM-Kansas City: Stanley B. Parsons Jr., chairman of history;

Frank Haney, supervisor of inventory; Rosalind Haywood, student.

UM-Rolla: Catherine Riordan, associate professor of psychology and affirmative action officer; Mary Lou Castleman, secretary to the chancellor; Samuel Hutson III, student.

UM-St. Louis: Lois Pierce, chairwoman of social work; Norman Seay, assistant to the chancellor for minority affairs; Laura Paige, student.

University Extension: Patrice Dollar, consumer education specialist, East Central Region.

System administration: Betty Roberts, assistant to the assistant vice president for computing and information technology.

The president hopes the committee will make recommendations by Dec. 15 so he can present the board with a recommendation early next year.



Sterling especially likes graduations because he didn't get to attend his own in 1965. "I finished school in January and at that time they didn't have a January graduation — you waited until spring. I was working so I didn't go. When I went two or three years ago to my first one, it was really the first graduation I had gone to at the University of Missouri, and it was wonderful. I

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Centers tie faculty technology to business ventures

By Karon Speckman
University Relations

High-pressure water jets pummel garbage, leaving a brown sludge and separating out cans and bottles.

"Then you take the water out of the sludge," says Dennis Roedemeier, director of Missouri Enterprise in Rolla. He digs through papers piled on his desk and computer and holds up a saucer shape made of brown cardboard-like material — the end result after water is removed from the sludge.

"You can make anything you want out of this cardboard-like material." He says 70 percent of all the trash people throw away could be reduced to this usable material. New technology solving old problems?

"Water jet technology is 10 years old. Nobody has ever tried it on garbage, but what you do is look at the problem and start using all the possible solutions. And that's what a university gives you — a number of options," Roedemeier says of the UM-Rolla experiment.

Missouri Enterprise is one of four incubator/innovation centers in Missouri devoted to transferring technology from universities and industry to the community to boost local economies.

The four centers — Missouri Ingenuity in Columbia, the Center for Business Innovation in Kansas City, the St. Louis Technology Center and Missouri Enterprise — were authorized by the Missouri legislature in 1983 to support and assist innovators and entrepreneurs. Funding for the centers, coordinated by the Missouri Corporation for Science and Technology in cooperation with the University of Missouri System, comes from the

Department of Economic Development.

Incubators nurture emerging companies by providing discounted lease rates on office and manufacturing space and coordinated business services such as computing, secretarial and consulting services. An incubator usually has a stable of consultants, tax and patent attorneys, accountants, marketing people and technical consultants to support the emerging business. Incubators also provide technical and financial assistance.

Incubators improve chances of survival

Several studies show that more than 80 percent of new jobs created annually are created by companies that have fewer than 100 employees, says Rick Finholt, director of economic development for the University System. "Small emerging companies are the companies creating jobs. At the same time, figures show that seven out of 10 start-up companies fail within a year or two. The majority that go through incubators — perhaps six out of 10 — survive and grow past five years.

"What you're doing in this type of incubator is shortening the learning curve of new entrepreneurs, and presumably you're giving them a better chance at survival," Finholt says.

Primus Corp., a Kansas City company that developed automated clinical blood testing instrumentation used in the management of diabetic therapy, is a good example of a surviving start-up company. (See accompanying story.)

The four centers also are called innovation centers because some companies working with the centers do not utilize discounted space or coordinated business



Staff members at Columbia's Missouri Ingenuity innovation center discuss a new project. From left are Roger Fischer, project coordinator; Paula McClure, executive staff assistant; and Greg Wolff, director.

services, but they do use the innovation center's expertise in areas such as marketing and financing.

Innovation centers primarily cater to technology and research-intensive, product-oriented companies. This technology base ties innovation centers with universities.

"The University can assist entrepreneurs in the commercialization of technologies and we, the University, also have technologies emerging from within our own family. We have faculty members, research scientists, engineers who are developing product ideas all the time," Finholt says.

A university-affiliated innovation center helps faculty members take those ideas out of the lab, create marketable products and then manufacture the product.

The technology used sometimes is referred to as "high-tech," says Greg Wolff, director of Missouri Ingenuity in Columbia, but technology-based is a better term. "You can't put a qualifier on technology."

Chronological age of the technology is not a requirement either. "We will use technology from 1989, and we will use technology from 1930 — whatever it takes — and we may intertwine the two," Roedemeier says.

Technology-based companies especially aided by centers

Because technology-based clients have different needs, they are very suited to incubator/innovation centers.

The start-up phase is more expensive and longer for a technology business than service businesses and other companies, says Bill Reisler, president of the Center for Business Innovation in Kansas City. "You think of the idea on day one, but it may be several years later before you can deliver that product. Because the burden of starting those businesses is great, they need an incubator more," Reisler says.

Technology-based entrepreneurs also may not have the initial business expertise needed to survive. "If somebody is opening a business in the service field, typically the person has come out

of experience in that field and knows customers, pricing, how to deliver," says Gene Boesch, director of the St. Louis Technology Center.

Center/University cooperation encouraged

All four centers have an open-door policy about faculty working with them, but the centers may not be fully utilized by the University. Out of the approximately 460 people who came to the St. Louis Technology Center since its opening in 1983, only between 10 and 20 were from the University, Boesch says. Boesch does utilize UM-St. Louis faculty to provide technical support, and some clients have used the work study program at UMR. Boesch says he also has analyzed technologies at the University's Columbia and St. Louis campuses.

Reisler says the ties between the University and the Kansas City center are good. "When a faculty or staff member has an idea for a business, even at the earliest stages, it's appropriate to talk to me. And the relationship between UMKC and the center is so strong that there is almost never a conflict between the traditional academic role and the business role.

"Chancellor (George) Russell believes that one of the things you have to prove to the community is that university-based researchers can do top quality cutting-edge research. And the proving ground for that has been the Center for Business Innovation. The university structure is very encouraging of the faculty or staff member participating in a business and reaping the rewards of that business when it's associated with the center," Reisler adds.

According to Roedemeier, UMR faculty members eagerly work with Missouri Enterprise. "They have changed schedules and found time to come by the office when needed," he says.

In addition to working with faculty/inventors, he uses faculty to assist communities in determining whether a technology-based company will work in their communities.

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Case in point

A successful joint venture between an innovation center and the University of Missouri-Kansas City is the Primus Corp. in Kansas City. The company develops automated clinical blood testing instrumentation, based upon high-performance liquid chromatography — an advanced technique of chemical measurement.

The initial application will improve blood testing, important in the management of diabetic therapy. The company has grown from two employees to 10, is currently seeking two additional employees and employs a commissioned sales force of 22 representatives nationwide. The company has attracted \$600,000 in private investment and a commitment of up to \$700,000 from Missouri Ventures Partners. A number of systems have been sold to hospitals and university medical centers.

The Center for Business Innovation assisted Primus Corp., a tenant company, in its successful \$258,000 common stock offering. Vice presidents of sales and marketing and finance and operations were located with the center's help, and a Missouri Research Assistance Act grant for \$140,000 was secured.



Jim Noffsinger, Primus Corp. vice president for research and development, left, shows Bill Reisler, president of Kansas City's Center for Business Innovation, the company's latest research.

"The center was invaluable throughout the process, but their most important contribution is the support they bring from the business and investment community," says Jace Rexroad, company president.

"The University, the UMKC School of Pharmacy and Chancellor (George) Russell worked with us in developing an innovative research contract that solved a number of difficult problems for us," Rexroad says, "and enabled us to begin product development several months ahead of schedule."

Curator is first-generation college graduate

(Continued from cover.)

really felt like I missed something by not going to my own at that time."

Sterling's family was from Livingston County. "My grandfather moved down to Bolivar in a wagon. He was a farmer and carpenter and had eight kids when he moved to Bolivar. Then he had another six or seven and 13 of them grew up down there and all went as far as the eighth grade," he says.

"Dad's the second youngest. I was the first one of the grandchildren to go to college. Now this next generation — my kids — more and more of them are going on to college."



The small town of Bolivar shaped his early life. "I grew up riding a bike and walking to school. We didn't bus anybody in town at that time. Until you got old enough to talk someone into giving you a ride, you walked everywhere and felt like you knew everybody in town and recognized everyone's house."

His view of the world changed when he attended UMC's journalism school. "I really feel that a lot of the success in my life goes right back to Columbia, Mo., because it was a great start. I sort of moved out of being a small-town kid even though I went back and lived in that same town. It broadened my perspective and I was able to go on," he says.

"It was great to be there in the early 60s. There were always so many important people walking the halls. I remember standing in the hall one day with two or three of my friends, and Walter Cronkite was talking to us.

"Jim Kirkpatrick was there — he was running for secretary of state for the first time — the first time he was elected. And he walked up to Walter Cronkite and gave him a card and Cronkite said, 'Jimmy, I'll vote for you. I've been in Missouri long enough to know you don't have to live here to vote here,' and laughed."

Many of the famous journalists Sterling met at the journalism school inspired him. "Those people came out there and talked to you. It just gave you a vision and an image of what you could be. When I went to journalism school, I didn't have any idea of what you

could go to journalism school and be. I just thought that you went there, you studied journalism and that allowed you to get a job as a reporter. Then maybe if you were real good, you got to be an editor sometime. I didn't know they taught advertising."

Sterling eventually studied both advertising and newspaper publishing. His first newspaper job after graduation was as ad manager and sports editor for the Franklin County Tribune in Union. He became general manager and editor of the Bolivar Herald-Free Press in 1968 and became a junior partner of the paper in 1972.

In 1979 he purchased the Herald-Free Press and Cedar County Republican. That purchase led to the formation of Sterling Media, a group of three Missouri weekly newspapers. Sterling also is a partner of Bolitho-Sterling Newspaper Service, a newspaper brokerage and appraisal firm.

"We list and sell newspaper businesses, representing the sellers across the U.S. and Canada," Sterling says of the brokerage firm. "Sometimes we spread beyond newspapers — printing plants, magazines, computers, data base companies. Bob (his partner) is doing some work in Europe now with an associate in Monte Carlo. I work out of Kansas City and Bolivar," he says, "with future plans calling for expansion to Chicago and New York."

'I think the University can be more.'

"I don't consider myself any great success, but I consider myself a lot better off today than what I would have been had I not had the opportunity to go to the University."

Although Sterling has strong ties to UMC, he works hard at seeing the whole picture of the University System. "I try not to be too provincial in my thought and spread out and understand all the campuses and the state and what is needed. I see us doing an awful lot of good things for the young people and for the state, but I think the University can be more," he says.

"I may have a rose-colored glasses view, but I see that the people who will get on the bandwagon for higher education in the next decade are going to be elected to high office. We're either going to do it, or we're not going to do it," he says.

"If we don't do it, we're going to be in deep trouble. Most people understand that. Yet there has been a feeling that as long as you kept taxes down, the public viewed you as the kind of person they wanted to send on to the next level of government. So if you voted against raising taxes, then you were better off in your political career."

But he sees that political reluctance to fund higher education changing.

"I talked to several of the people running for governor — Republicans and Democrats.



They're all saying the same thing — we've got to do more for higher education because of the tie of higher education to economic development in the state."

Sterling thinks the University needs to do a better job of showing its strong points. "Failures are always going to pop up on the front page, but there is a tremendous amount of success at the University. When you look at the number of alumni in this state who owe something to the University — their lives were changed and improved and they have gone on to better things. I think a person looks back at the University and thinks that the university experience was what changed your life and moved you ahead," he says.

"There is a generation like me that thinks this is very important for their kids, their grandchildren and great-grandchildren. We can't let up."

Sterling feels the board and administrators work hard to pass the college dream on to a new generation. "I think we have made some tough calls. There have been some tough calls from the administration's point of view.

There is a point where the administration may not be doing what everybody on the board wants, but they're doing what a majority of the board wants. There is a lot of politicking on the board to try to get members to switch to another side so we can accomplish these things."

He would like fewer studies on the effectiveness of the administration and more action. "I wish sometimes we'd quit doing studies and put these people to work on what they are supposed to do instead of gathering things up for the studies," he says.

"Yet, it's awfully important that people in the administration understand that the board is not there simply to rubber stamp what they say they want to do. This causes administrators to do a better job. They are more complete. They are more prepared when they come to the board meetings. I think it's important that administrators know the board is going to ask questions and the board is not going to automatically sign off on whatever."

Squeezing board meetings into

James C. Sterling

Born: Nov. 29, 1942, Detroit, Mich.

Education: associate's degree, Southwest Baptist College, Bolivar, 1962; bachelor of journalism degree in advertising and newspaper publishing, UM-Columbia, 1965

President: Sterling Media Ltd., Bolivar; Bolitho-Sterling Newspaper Service, Bolivar and Kansas City; Bolivar Herald-Free Press, Buffalo Reflex, Stockton Cedar County Republican newspapers; Missouri ColorWeb Printers Inc.

Activities: former member of Board of Directors, executive committee, Columbia Missourian Publishing Association; Board of Directors and past president, Missouri Press Association; past president, Springfield Ad Club; past president, Bolivar Rotary Club; Board of Directors, Citizens Memorial Hospital Foundation, Bolivar

Awards: Silver Medal, 1986, American Advertising Federation

Personal interests: Skiing

an already crowded schedule is a challenge for Sterling. "If I were to pick a time in my life to be a curator, I probably would have picked some other time because I got involved in this new business exactly the same time the board involvement started. Either one was enough to take all my time."

But he's made the time.

"I've always had a philosophy that if you give, it's good for you. I don't know if it goes back to Santa Claus, or that it's better to give than receive, but I've always tried to be a giver. I've always served on lots of boards and campaigns such as Chamber of Commerce campaigns. When you're in a small town in the newspaper business, that sort of activity comes naturally to you," he says.

"If you were fortunate enough to have good enough luck to be successful, you ought to give some time back. There is some point when you could give away all your time and your business would go down the drain. Sometimes I feel sort of on that brink myself. But there's always enough time."

Seven professors receive board's highest honor

Four faculty members from UM-Columbia, two from UM-Kansas City and one from UM-Rolla have been named Curators' Professors by the Board of Curators. The title is reserved for outstanding scholars with established reputations in their fields of scholarly expertise.

The highest honor the Board of Curators can bestow on a faculty member has been received by Daniel W. Armstrong, UMR professor of chemistry and head of the analytical chemistry division; Joanne Baker, UMKC professor of music and chairwoman of the keyboard division at the Conservatory of Music; J. David Eick, UMKC professor of oral biology at the School of Dentistry; Donald H. Kausler, UMC professor of psychology; Sudarshan K. Loyalka, UMC professor of nuclear engineering; Curtis J. Nelson, UMC professor of agronomy; and Joseph E. Wagner, UMC professor and chairman of veterinary pathology.

Daniel W. Armstrong

Armstrong is an internationally recognized researcher and authority on liquid chromatography and separations as applied in the pharmaceutical and biomedical fields. He developed and patented a process separating optical isomers — mirror-image chemical compounds that form in comparable amounts when biologically active substances are produced artificially.



Daniel W. Armstrong

Armstrong received a bachelor of science degree in interdepartmental science and mathematics from Washington and Lee University and master of science in chemical oceanography and doctor of philosophy in chemistry degrees from Texas A&M University.

He joined the UMR faculty in 1987 as a professor of chemistry. He was co-editor of an American Chemical Society book and has another book in preparation. He also is the author of more than 100 research papers and nine book chapters. Armstrong received the Faculty Excellence Award from UMR in 1988 and the Outstanding Teacher Award in 1989.

Joanne Baker

Baker, the first Conservatory of Music professor to receive this honor, is internationally recognized for her skills as a teacher, performer and composer. Her accomplishments have been recognized with the Music Teachers National Association Teacher Recognition Award, Kansas Musical Club Award, Conservatory



Joanne Baker

Trustees Good Teaching Award and Burlington Northern Faculty Achievement Award.

In 1987 Baker taught and lectured in China at the invitation of the Central Conservatory of Music in Beijing. She was the first outsider ever invited to teach piano at the Central Conservatory.

Baker, who has taught at UMKC for more than 40 years, has served for four years as chairwoman of the jury for the Gina Bachauer International Piano Competition — the nation's largest and most prestigious piano competition. She also has been invited to chair the 1991 competition.

She received her bachelor of arts and master of arts degrees from the University of Michigan.

J. David Eick

Eick is recognized nationally and internationally for his original research on dental materials. Eick, a fellow of the Academy of Dental Materials, joined the UMKC faculty in 1986 as professor of oral biology and quickly established his research laboratory, currently supported by outside funding of more than \$1 million.



J. David Eick

Eick has published or has submitted for publication 73 scholarly articles. He also has held several offices in professional and scholarly organizations, including president of the Dental Materials Group, International Association of Dental Research.

He received his bachelor of science degree in mathematics from the University of Michigan, his master of science degree in materials engineering from George Washington University and his doctor of philosophy degree in chemical engineering from the State University of New York, Buffalo.

Donald H. Kausler

Kausler is recognized as a national and international expert who has guided and moved the field of the psychology of aging into new directions.

His work on human memory is at the center of work on cognition, and in the past several decades his studies on how memory changes occur during the aging process have had significant influence in the area of aging. He also has worked on changes in cognitive processes from Alzheimer's disease, arthritis and diabetes. His research has been supported with grant funds primarily from the National Science Foundation and the National Institute of Aging.



Donald H. Kausler

Kausler has written several books and has published more than 100 professional articles. He received his bachelor's degree in zoology and his doctor of philosophy degree in general-experimental psychology from Washington University.

Sudarshan K. Loyalka

Loyalka has developed an international reputation for his research in rarefied gas dynamics and aerosol mechanics. His work on rarefied gases is essential for understanding important problems in the environmental, energy and space research areas. His work has been supported by the National Science Foundation and the Nuclear Regulatory Commission.



Sudarshan K. Loyalka

He joined UMC as a nuclear engineering assistant professor in 1967 and has published more than 100 scholarly articles with his students and colleagues. He was elected a fellow in the American Physical Society in 1982 and led the effort to establish the Particulate Systems Research Center at the University.

He received his bachelor of engineering degree from the University of Rajasthan and his master of science and doctor of philosophy degrees in nuclear mechanics from Stanford University.



Curtis J. Nelson

Curtis J. Nelson

Nelson has made major contributions in understanding the physiology and adaptation of forage grasses and legumes for Missouri and similar geographical areas. He was the first in the world to document the genetic variation in the photosynthesis in tall fescue and subsequently developed strategies for the genetic improvement of the physiological processes.

He co-authored a basic plant science book and has published more than 100 research articles. He was recently elected president of the Crop Science Society of America and has held offices with the American Society of Agronomy. He joined the UMC faculty in 1967 as an assistant professor.

Nelson received an associate of arts degree from Austin, Minn., Junior College and bachelor of science in animal husbandry and master of science in forage production degrees from the University of Minnesota. He received his doctor of philosophy degree from the University of Wisconsin.

Joseph E. Wagner

Wagner is a national and international leader in the field of laboratory animal medicine.



Joseph E. Wagner

He identified feline cytauxzoonosis, a disease veterinarians now routinely recognize and treat. The disease has been linked to a similar one found in African cattle. Through Wagner's efforts, the University has become the

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For your benefit: A letter

Dear Editor:

During this enrollment change period we have received several notices from Human Resources and articles in *Spectrum* about changes in the self-funded health insurance plan. However, there was no discussion of a major change in policy concerning contributions toward health benefits.

The information from Human Resources did not mention that the University no longer contributes the same dollar amount to whichever benefits option the employee chooses. Employees enrolling in some HMO options receive a smaller dollar contribution than that contributed to the traditional, self-funded option. Apart from the legal considerations of such a move, it seems unfair to subsidize one plan — and one group of employees — more than another, and then to avoid

Curators' Professors

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nation's largest supplier of veterinarians trained in the specialty of laboratory animal medicine. His educational training program and research have been funded by the National Institutes of Health, bringing in more than \$8 million in outside funding.

He is co-author of a best-selling veterinary medical text and has published more than 120 scientific papers. He received a master of public health degree from Tulane University, his doctorate in veterinary medicine from Iowa State University and his doctor of philosophy degree in pathology/parasitology from the University of Illinois.

publicizing such a change in policy.

To be sure, the enrollment in HMOs systemwide is negligible (10 percent to 15 percent) because there are no such choices available in Columbia or Rolla. However, in Kansas City over a third of the eligible employees participate in HMOs. They ought to be treated fairly.

Michael B. Wood,
Executive Director
National Center for Managed Health
Care Administration, UM-Kansas City

A response from the University System benefits office:

The Health Maintenance Organization Act of 1988 allows an employer certain latitude in the manner in which it structures its contributions toward premiums for employees who choose to enroll in an HMO. The University's contribution policy is based on this federal law.

The University pays for two-thirds of the cost of the \$100 deductible option of its medical plan. The University will contribute that same dollar amount toward the premium of an HMO if the HMO premium is equal to or greater than the cost of the University \$100 deductible plan. If the HMO prices its premium structure less than the University's, the University will pay for two-thirds of the cost of the HMO premium.

Employees are advised of premium changes in advance of the enrollment change period in which they may transfer, within limits, between health care programs.

Specific questions can be directed to Mike Paden, director, UM System faculty and staff benefits, 114 Heinkel, Columbia.

Innovation centers

(Continued from page 1.)

Wolff says faculty members are encouraged to talk with him about their ideas for new products. He says faculty members need to become comfortable with involvement in technology transfer.

A consultant hired by UM-Columbia, Missouri Ingenuity, Regional Economic Development Inc. and the UM System conducted a preliminary feasibility study to determine if Columbia and UMC were suitable locations for development of a technology-based incubator.

"What the consultant told me and other people is that Columbia has a unique opportunity because there hasn't been a push. It's one of the few places where there's a high concentration of research going on, but commercialization aspects haven't been pursued," Wolff says.

The consultant noted that recent organizational changes indicate a serious commitment to economic development. However, Finholt points out, technology transfer within the University requires walking a fine line between education and business.

"Clearly, the University is not in the same business as business — we don't exist to make a profit. We exist to further knowledge. But in certain research fields, you almost can't help but create products as you create new ideas," Finholt says.

Each of the four innovation centers will be featured in subsequent issues.

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Phone: (314) 882-4591