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## MU dean reaches out to nuclear science faculty

By JANESE SILVEY

Saturday, May 19, 2012

**The dean of the University of Missouri's College of Engineering extended an olive branch to nuclear engineering faculty yesterday, asking them to be involved in the future of the discipline on campus.**

"I am looking forward to working with you in creating the Nuclear Engineering Program that will continue and broaden service to our students, our state and our nation," Jim Thompson wrote in an email to professors in the Nuclear Science and Engineering Institute.

It's the latest in a monthslong controversy regarding the future of the institute.

In March, administrators told the four core professors that they were doing away with the institute in exchange for a broader interdisciplinary program. Chancellor Brady Deaton and Provost Brian Foster have said the goal of the plan is to strengthen the science on campus by bringing together dozens of faculty members from a variety of departments, including the medical school, physics and chemistry sciences and MU's research reactor.

Thompson earlier this month moved forward with plans to create new emphasis areas for nuclear engineering degrees without involvement of the institute's professors. His email yesterday appears to try to rectify that, asking them to review their curricula with the goal of "integrating your strengths with ours to establish a well-rounded Nuclear Engineering Program in the College of Engineering."

Sudarshan Loyalka, a curator's professor of nuclear engineering, said professors are discussing the offer and how to proceed.

The university also released an outline of the current status of nuclear science and engineering at MU yesterday, saying that the institute will continue to exist until all students, including those starting this fall, graduate. The institute's faculty members are being required to move out of the Graduate School and into new academic homes by July 2014. The changes now in the works, the plan says, aim to respond to new economic opportunities.

An external advisory committee is now being formed and will include members from the industry, the federal government and national labs to advise the college on education and research programs.

"The university greatly values the many contributions NSEI faculty continue to make to the university and to the nuclear engineering industry," spokeswoman Mary Jo Banken said. "We believe these actions will provide new opportunities for NSEI and College of Engineering faculty and the students they serve, and we look forward to providing a strong nuclear science and engineering curriculum and degree offerings for generations to come."



## Ameren backs MU's nuclear changes

*CEO calls school important in bid for grant funds.*

By JANESE SILVEY

Friday, May 18, 2012

**A plan to establish a broad nuclear science and engineering consortium at the University of Missouri has support from Ameren Missouri, ensuring the campus' participation in the company's quest for a federal grant.**

"It is very encouraging to see that the University of Missouri is looking to strengthen its overall nuclear engineering program, as well as effectively leverage the talented faculty that you have throughout your other engineering disciplines to further strengthen your overall engineering programs for students," Ameren CEO Warner Baxter wrote in a letter to UM System Chief of Staff Bob Schwartz.

He also said MU will be an "important strategic partner" in Ameren's partnership with Westinghouse Electric Co. to compete for as much as \$452 million in U.S. Department of Energy funding to design and build small modular nuclear reactors.

It's the first public support for MU's plans to alter the Nuclear Science and Engineering Institute, a decade-old graduate-level program with an international reputation.

In March, MU administrators announced they were doing away with NSEI, a decision that received immediate criticism from students and alumni. Earlier this month, one Ameren worker questioned whether a fractured nuclear engineering system at MU would hurt the campus' chances to participate in the federal project.

UM System President Tim Wolfe has said the situation is a campus matter, but the recent exchange between Schwartz and Baxter indicates the system is keeping tabs on it.

NSEI will remain in full operation until all students, including those admitted this fall, have graduated and then possibly later, Schwartz wrote in his letter. He also wrote that Wolfe directed him to provide information about NSEI to Ameren.

"During the reorganization and into the future, steps are also being taken to ensure the success of the faculty members within the NSEI unit," Schwartz said. "Their efforts in education, research and delivering the program will continue to be supported."

Although NSEI will still be around, the College of Engineering already has begun plans to develop separate nuclear engineering degrees with new emphasis areas. Engineering Dean James Thompson sent the NSEI faculty members an email early this afternoon asking them to participate in developing the program.

Members of MU's American Association of University Professors have complained that doing away with NSEI and creating new degree tracks without input from faculty violates university rules.

The group's president, Eddie Adelstein, sent a letter to the UM Board of Curators this morning expressing concerns about the situation.

When told about Schwartz's letter, Sudarshan Loyalka, a curators' professor of nuclear engineering, said he is cautiously optimistic about future plans.

"We are all committed to working with the university administration towards a 'good landing' for NSEI and assuring student, faculty and alumni successes, consistent with university regulations," he said in an email. "We remain hopeful that this would be possible as the discussions progress, and we also believe that this would be most helpful to the nuclear industry and utilities, the medical physics and health physics professions and the public at large."



## REDI forms task force to lobby for nuclear opportunity

By JACOB BARKER

### NO MU MENTION

Sunday, May 20, 2012

While the effort to build a small modular nuclear reactor and develop a process to manufacture them might be years away, Regional Economic Development Inc. isn't going to be sit by idly.

REDI, Columbia's publicly and privately-funded economic development organization, is in the process of setting up a task force to assist Ameren and its engineering partner, Westinghouse, with anything the companies need as they move forward with plans to develop the nuclear reactors.

"Not only for the state of Missouri, this region of Missouri, it's really a tremendous opportunity," said REDI board member and Boone Electric Cooperative CEO Todd Culley, who has been tapped to lead the task force because of his connections in the electricity industry. "It's really as big as they come with our economic development hats on."

Last month, Gov. Jay Nixon, Ameren and Westinghouse officials announced they would try for a \$452 million grant from the U.S. Department of Energy to develop modular nuclear reactors. Although smaller than typical nuclear reactors, small modular reactors, or SMRs, can be built more quickly. The money, which the DOE is expected to award by the end of the summer, would cover half of the costs of designing and obtaining a construction and operating permit from the Nuclear Regulatory Commission.

Ameren has an existing nuclear plant in Callaway County, and it has suggested that a new plant, if plans move forward, should be nearby. In terms of manufacturing the SMRs, a presentation from the companies said: "Westinghouse will explore economic development opportunities in Missouri in the areas of SMR-related training, design, manufacturing and university research and education programs."

REDI officials want to make sure Mid-Missouri can get a piece of the action, although they're not yet sure what Ameren and Westinghouse might want from them. But they think other communities might eventually try and get parts of the manufacturing process using tax breaks and other incentives.

"If there are opportunities, we certainly want to be positioned," REDI Director Mike Brooks said. "Any project's gonna have certain give-and-take, and we want to be able to respond."

But Brooks and Culley are quick to admit that specifics on the shape of the project are lacking. There could be one manufacturing facility, or there could be many and a common assembly plant, Culley said. There's no way to know what sort of infrastructure the companies might need, and even the idea of some sort of SMR factory isn't a sure bet. "There's no assurance that there will be any new manufacturing facility," Brooks said. "That's an assumption we're making."

Still, Culley hopes to name the other task force members in coming weeks. In addition to those with knowledge of the industry, he expects local government officials and University of Missouri administrators will be part of the group. He and other local officials already have sent letters to DOE Director Steven Chu, urging him to award part of the grant money to Ameren and Westinghouse.

"We want to be able to hit the ground running," Culley said. "We want to be able to act at the right time."

The idea of forming a task force early was proposed by Boone County Presiding Commissioner Dan Atwill at a REDI meeting earlier this month. He and others in the group referenced the project's potential to have decades of economic impact on Mid-Missouri. And, Culley pointed out, the project is unique because it could attract many other businesses. As efforts to curb carbon emissions continue, power-reliant industries could be attracted to areas with clean, cheap nuclear power.

"I think everybody on the planet would know where Missouri is," Culley said.



## University does well in this year's session

By RUDI KELLER

Sunday, May 20, 2012

JEFFERSON CITY — In December, Gov. Jay Nixon quietly proposed an unusual scheme to fund higher education — state colleges and universities would lend the state \$106 million from accumulated reserves, and the money would be redistributed for 2012-13 operations and no school would see its funding cut.

**Publicity killed the idea before it could be rolled out as a finished deal. The bulk of the money would have come from the University of Missouri.**

It was the opening of what looked like a possibly difficult year in the legislature for the University of Missouri System. Instead, it could go down as a year when a recovery in state funding began after lawmakers blocked cuts proposed by Nixon to all colleges and universities.

It did not hurt matters that Sen. Kurt Schaefer, R-Columbia, is chairman of the Senate Appropriations Committee or that Rep. Chris Kelly, D-Columbia, has the ear of the Republican House leadership on budget matters.

Other legislative victories for the university include a new state commitment for funding half the cost of new campus buildings and the absence of legislation that sought to eliminate the Sue Shear Institute for Women in Public Life.

One of the few defeats for the university came on a bill to create local districts with taxing power to support University Extension, UM's program to bring learning to every county in the state.

With his borrowing scheme scuttled, Nixon had proposed cutting support for state colleges and universities by 12.5 percent. He later shaved that cut when \$40 million from a national mortgage fraud settlement became available, but that still left lawmakers to find \$66 million to fill the gap.

"This body made some really, really hard cuts and some difficult choices to give level funding to higher education," said Steve Knorr, lobbyist for the university.

Perhaps the only misstep of the year was when new UM System President Tim Wolfe called the effort to kill the Sue Shear Institute "a fucking embarrassment." A dust-up followed that ended with Knorr being

reprimanded in public just before the final conference committee vote to give UM flat funding for the coming year.

The effort to kill the institute, a program on the University of Missouri-St. Louis campus, was spearheaded by Sen. Jane Cunningham, R-Chesterfield. She accused it of favoring liberals and Democrats.

The issue became caught up in a budget fight that led to a near-breakdown in the state Senate. Schaefer's position as budget leader was sustained by the narrowest of margins in a key 17-15 vote on employee pay raises.

"You certainly take your lumps along the way to get accomplished what you need to get accomplished," Schaefer said.

In the end, no legislation mentioning the Sue Shear Institute was passed.

From the Boone County delegation, only Rep. Mary Still, D-Columbia, was publicly disappointed in the budget.

She correctly pointed out that funding for the university is lower, adjusted for inflation, than it has been for nearly a decade. Still has pushed for increases in the state tobacco tax, offering bills to put an increase before voters and to implement a small hike in the 17-cents per pack tax without asking voters.

"We are at a time of missed opportunities," Still said.

The bill setting a state policy to fund half the cost of new campus buildings might seem like an empty gesture. The bill makes putting money in the fund optional for lawmakers, and there is no extra cash in the state budget. It is unlikely that construction will be a priority while general revenue receipts are \$500 million below their levels from 2008.

But it sets a goal that future lawmakers will view as a commitment, Kelly said. And the colleges and universities "view it as a really important fundraising tool."



## MU team develops test to predict arthritis

By JANESE SILVEY

Friday, May 18, 2012

**A team of medical researchers at the University of Missouri has come up with a way to detect whether a person is prone to arthritis before it becomes a crippling problem.**

It is a first-of-its-kind test, said James Cook, a researcher in the College of Veterinary Medicine and Department of Orthopaedic Surgery. An agreement is in the works that would allow a company to market the test for dogs, and after clinical trials and approval from the Food and Drug Administration, the researchers are interested in finding a company to license and market the tests for humans.

The team evaluated a panel of proteins by analyzing dogs with arthritis and determined there are specific proteins associated with arthritis. Because canine joints operate similarly to human joints, the test is being adapted to humans.

By taking a drop of fluid from a patient's joint, doctors would be able to analyze those proteins and predict future arthritis and how severe it might be. Researchers think the test will be most helpful after joint-related surgeries.

"The way I'm seeing the test is, it's going to be most powerful in helping prognosticate or indicate how a patient is going to do after surgery and how they might progress," said Aaron Stoker, a research assistant professor.

Some patients don't experience arthritis after surgery, Cook said, while others get severe arthritis quickly regardless of how well the procedure and rehabilitation went. Determining how prone a person is to arthritis would help doctors figure out the best treatment options, then the test could be used later to determine how well the patient is responding to that treatment.

The biomarker test also could be used for routine screenings, especially for people who have a family history or have a work, sports or military background that took a toll on joints, Cook said.

If such a test flagged protein levels that put people at risk of arthritis, "then we're going to do everything we can to get the proteins back at normal levels," Cook said. "Diet can influence that and exercise. If you're a long-distance runner, for instance, and levels are elevated, we're going to encourage you to switch to cycling or swimming. If running is tearing down joints, you should switch to something else." The study is published in the Journal of Knee Surgery.



## Research With Dogs Points to Early Test for Arthritis

### One drop of blood can predict the joint disease before symptoms appear, scientists say

May 18, 2012

FRIDAY, May 18 (HealthDay News) -- A new test that can detect and predict osteoarthritis before patients experience symptoms was developed by analyzing the joints of dogs with arthritis.

Osteoarthritis, the most common form of arthritis, affects more than 27 million adults in the United States. **Early detection of the disease, which causes pain and swelling in the joints, would allow better treatment options, according to the University of Missouri researchers.**

They said their test can be conducted using a single drop of fluid from a patient's joint. The fluid is obtained with a small needle.

"With this biomarker test, we can study the levels of specific proteins that we now know are associated with osteoarthritis," James Cook, a professor of orthopedic surgery and a researcher at the MU College of Veterinary Medicine, said in a university news release.

"Not only does the test have the potential to help predict future arthritis, but it also tells us about the early mechanisms of arthritis, which will lead to better treatments in the future," he explained.

Cook and his colleagues used dogs to develop the test, noting that dog joints operate similarly to the joints of humans and the test is being adapted to human patients. The test has been submitted to the U.S. Food and Drug Administration for approval.

Scientists note, however, that research with animals often fails to provide similar results in humans.

"This test has already shown early usefulness for allowing us to monitor how different treatments affect the arthritic joints in people," Cook said. "With further validation, this test will allow

doctors to adjust and fine tune treatments to individual patients. Also, being able to tell patients when they are at a high risk for developing arthritis will give doctors a strong motivational tool to convince patients to take preventive measures including appropriate exercise and diet change."

The research appears in the *Journal of Knee Surgery*.

# COLUMBIA MISSOURIAN

## **MU School of Health Professions kicks off health conversation series**

By Teresa Avila

May 18, 2012 | 6:30 p.m. CDT

**COLUMBIA — How the brain reacts to extreme changes such as losing a limb was the focus of the first conversation in a new lunchtime series at the MU School of Health Professions.**

**Scott Frey, director of the MU Brain Imaging Center, discussed his research on how the brain adapts to a significant loss of muscle and nerve activity. Using people who have lost a right hand as a main example, he described how the brain reorganizes itself in reaction to that loss.**

The discussion ended with a look at the clinical application of this research, including a successful hand transplant.

The Collaborative Scholarship & Discovery Conversation Series aims to promote interaction between researchers and members of the community.

"I think one of the biggest goals is to help members of the community better understand what is going on inside their university," said Megan Gill, strategic communications director for the School of Health Professions. "This is the peoples' university."

Frey said he worked to present his research in a way that would appeal to a wide audience.

"We've got people who are scientists, and we've got people who are clinicians, but we also have some people who are from the community, which means the goal of this new series is being achieved," he said. "We're being a diverse group."

The presentation included questions and discussion from the audience of about 40 people in Lewis Hall.

Jeff Krug, a teaching assistant professor in the MU physical therapy program, said afterward that was he interested to hear research on topics he regularly discusses in his neurophysiology classes.

"It was helpful to me to reiterate some of what I knew, but also take it to a deeper level," Krug said.

Krug said he was excited that the research Frey presented can be applied to work being done in other departments and programs. This potential cross-pollination of ideas was what led health professions Dean Richard Oliver to approach Frey about the series, Frey said.

At one point during the Friday presentation, an audience member suggested a different way to gather related research. Frey said, in essence, 'good idea' and asked the woman email him.

The series has been several months in the making. It is loosely slated to take place on the third Friday of the month during the lunch hour, Gill said. Times and dates will change to accommodate speakers' or community schedules.

Future speakers have not been set, although a Harvard professor is scheduled to speak in March, Gill said.

The discussion was recorded and will be posted as a video on [the School of Health Professions website](#).