



APR 23 2012

## UM to support nuclear push

*Research ability is touted as a plus.*

By RUDI KELLER and JANESE SILVEY

Friday, April 20, 2012

**JEFFERSON CITY — The University of Missouri, which came close to dismantling its Nuclear Science and Engineering Institute this year, will play a major support role for the Westinghouse-Ameren Missouri application for federal funds to develop small modular reactor technology.**

If the Missouri application is approved this summer, nuclear engineering programs on the Columbia and Rolla campuses would participate, officials from Westinghouse and Ameren said.

"As we see it, when you have a university system with such expertise in the nuclear area, you are going to leverage that," said Ameren CEO Warner Baxter.

Westinghouse and Ameren intend to complete the reactor designs and install them as a demonstration at the Callaway Nuclear Plant site. Westinghouse representatives said the company intends to make small modular reactors, or SMRs, in Callaway County as well.

"Having the university system there, able to train so many engineers but also having lots of research capability," will be a boost to the grant application, said Kate Jackson, senior vice president and chief technology officer for Westinghouse.

There was no mention yesterday of the administrative decision that almost closed the nuclear institute, a nearly 10-year-old graduate-level program once ranked No. 1 in the nation for faculty productivity.

On March 12, Graduate School Dean George Justice announced the institute would close to make way for a new interdisciplinary nuclear science program. Administrators have since reversed the decision, agreeing to keep NSEI open until at least all students complete the program.

Sudarshan Loyalka, a curators' professor of nuclear engineering, said Ameren and Westinghouse's partnership should emphasize the need to strengthen NSEI rather than trying to start a completely new program.

"We do have a strong nuclear engineering program, and the program should be strengthened further with this opportunity," he said.

MU Chancellor Brady Deaton said after the announcement that he was still learning about the university's role. "We will be involved in the very beginning in the research and educational aspects of this," he said.

Area lawmakers said they see a long-term benefit that will give the university a much higher profile in nuclear science. "This could make them the No. 1 research entity in the world based on their role in designing and training on these units," Sen. Kurt Schaefer, R-Columbia, said.

State Rep. Mary Still, D-Columbia, said in a news release that the emphasis demonstrates "the important role MU, our state research university, plays in the economy of the future."

# ST. LOUIS POST-DISPATCH

## Editorial: Lots of 'ifs' in Missouri's latest nuclear gambit

By the Editorial Board | Posted: Sunday, April 22, 2012 12:15 am | (4) comments.



R.J. Matson/Post-Dispatch, April 22, 2012

### MU MENTION P. 2

The most important sentence spoken or printed about the allegedly "transformational" plan to build small, modular nuclear reactors in Missouri is buried at the bottom of an Ameren Missouri news release.

"Given these uncertainties," the sentence begins, "undue reliance should not be placed on these forward-looking statements."

The sentence is required under a 1995 federal law called the Private Securities Litigation Reform Act that protects corporations when they lay out plans that may or may not come to fruition.

On Thursday, Gov. Jay Nixon and executives from Ameren and nuclear-industry giant Westinghouse announced a grand plan to seek a \$452 million grant from the U.S. Department of

Energy to develop the next generation of nuclear reactors: small, modular units that produce about 225 megawatts of power compared to the 1,000-megawatt monsters now in disfavor.

**If Westinghouse gets the grant, it says it intends to design and build the first units for use at Ameren's Callaway County plant, working with researchers at the University of Missouri's engineering programs in Columbia and Rolla, thus planting the seeds for a multi-billion-dollar industry based right here in the Show-Me State.**

If a chunk of that \$452 million is spent in Missouri, it would be a welcome boost to the state's economy.

The key word here is "if."

If Westinghouse gets the grant, and if Congress appropriates the money, and if a market actually develops for new nuclear power, and if the smaller reactors are financially feasible, and if the industry ever figures out what to do with its dangerous waste, then, yes, the agreement could be, as Mr. Nixon said Thursday, "transformational."

Of course, "transformational" is the same word Mr. Nixon used nearly two years ago, at the same spot outside the Governor's Mansion in Jefferson City, when he announced a different agreement with Ameren that was supposed to be "transformational."

That plan, which involved legislation that would force consumers to finance a nuclear plant before it was ever operational, assuming risks that Wall Street still won't take, has been abandoned in favor of the new "transformational" plan.

The political lure for Mr. Nixon is the promise of jobs, even if in a best-case scenario they're years down the road. But there is always a cost for those jobs, and that's an important part of the equation.

Ameren is keeping open the possibility that if it ever does apply for a permit to build a nuclear reactor, modular or not, it will seek an "enhanced" regulatory framework. Our guess is that "enhanced" means customers would pay up front.

Then there will be tax breaks and other incentives, probably a lot of them, sought by Westinghouse to bring its operation to the state. This is how the game is played, and if Missouri wants to win, it will play.

We'd rather see some transformational work done on improving Missouri's schools, or its moribund tax base, or its low health care rankings. But our leaders seem to be busy chasing the next great business idea, only to wash their hands of it and ask us to turn away when reality falls short of their grand pronouncements.

Missourians can be hopeful. It never hurts to hope. But this is the Show-Me State, and we've seen this transformational play before.

## No 'God Spot' In Brain, Spirituality Linked To Right Parietal Lobe

Scientists have speculated that the human brain features a “God spot,” one distinct area of the brain responsible for spirituality. **Now, University of Missouri researchers have completed research that indicates spirituality is a complex phenomenon, and multiple areas of the brain are responsible for the many aspects of spiritual experiences.**

“We have found a neuropsychological basis for spirituality, but it’s not isolated to one specific area of the brain,” said Brick Johnstone, professor of health psychology in the School of Health Professions. “Spirituality is a much more dynamic concept that uses many parts of the brain. Certain parts of the brain play more predominant roles, but they all work together to facilitate individuals’ spiritual experiences.”

In the most recent study, Johnstone studied 20 people with traumatic brain injuries affecting the right parietal lobe, the area of the brain situated a few inches above the right ear. He surveyed participants on characteristics of spirituality, such as how close they felt to a higher power and if they felt their lives were part of a divine plan. He found that the participants with more significant injury to their right parietal lobe showed an increased feeling of closeness to a higher power.

“Neuropsychology researchers consistently have shown that impairment on the right side of the brain decreases one’s focus on the self,” Johnstone said. “Since our research shows that people with this impairment are more spiritual, this suggests spiritual experiences are associated with a decreased focus on the self. This is consistent with many religious texts that suggest people should concentrate on the well-being of others rather than on themselves.”

Johnstone says the right side of the brain is associated with self-orientation, whereas the left side is associated with how individuals relate to others. Although Johnstone studied people with brain injury, previous studies of Buddhist meditators and Franciscan nuns with normal brain function have shown that people can learn to minimize the functioning of the right side of their brains to increase their spiritual connections during meditation and prayer.

Johnstone makes the comparison to other kinds of disciplines; “It is like playing the piano, the more you train your brain, the more the brain becomes predisposed to piano playing. Practice makes perfect.”

While researchers have been focused on finding a 'God spot' in the brain, the new research suggests that it might be better to focus on the neuropsychological questions of self focus vs

selfless focus. As Prof. Johnstone explains: "when the brain focuses less on the the self (by decreased activity in the right lobe) it is by definition a moment of self-transcendence and can be understood as being connected to God or Nirvana. It is the sensation of feeling like you are part of a bigger thing."

The research does not make claims about spiritual truths but demonstrates the way that the brain allows for different kinds of spiritual experiences that Christians might name God, Buddhists it could be Nirvana, and for atheists it might be the feeling of being connected to the earth.

On the other end of the spectrum, Professor Johnstone admits that for him it is the music of Led Zeppelin that helps him transcend himself: "When I put on my headphones and listen to "Stairway to Heaven" I just get lost."

## The God spots revealed: Scientists find areas of the brain responsible for spirituality

By [Daily Mail Reporter](#)

**PUBLISHED:** 01:15 EST, 21 April 2012 | **UPDATED:** 01:57 EST, 21 April 2012

Scientists have speculated for years that the human brain features a 'God spot,' one distinct area of the brain responsible for spirituality.

**Now, University of Missouri researchers have completed research that indicates spirituality is a complex phenomenon and that multiple areas of the brain are responsible for the many aspects of spiritual experiences.**

The new work is based on a previously published study that indicated spiritual transcendence is associated with decreased right parietal lobe functioning,

Missouri University (MU) researchers replicated their findings. In addition, the researchers determined that other aspects of spiritual functioning are related to increased activity in the frontal lobe.

'We have found a neuropsychological basis for spirituality, but it's not isolated to one specific area of the brain,' said Brick Johnstone, professor of health psychology in the School of Health Professions.

'Spirituality is a much more dynamic concept that uses many parts of the brain.'

'Certain parts of the brain play more predominant roles, but they all work together to facilitate individuals' spiritual experiences.'

In the most recent study, Johnstone studied 20 people with traumatic brain injuries affecting the right parietal lobe, the area of the brain situated a few inches above the right ear.

He surveyed participants on characteristics of spirituality, such as how close they felt to a higher power and if they felt their lives were part of a divine plan.

He found that the participants with more significant injury to their right parietal lobe showed an increased feeling of closeness to a higher power.

'Neuropsychology researchers consistently have shown that impairment on the right side of the brain decreases one's focus on the self,' said Johnstone.

'Since our research shows that people with this impairment are more spiritual, this suggests spiritual experiences are associated with a decreased focus on the self.

'This is consistent with many religious texts that suggest people should concentrate on the well-being of others rather than on themselves.'

Johnstone says the right side of the brain is associated with self-orientation, whereas the left side is associated with how individuals relate to others.

Although Johnstone studied people with brain injury, previous studies of Buddhist meditators and Franciscan nuns with normal brain function have shown that people can learn to minimize the functioning of the right side of their brains to increase their spiritual connections during meditation and prayer.

In addition, Johnstone measured the frequency of participants' religious practices, such as how often they attended church or listened to religious programs.

He measured activity in the frontal lobe and found a correlation between increased activity in this part of the brain and increased participation in religious practices.

The research indicated that there are all kinds of spiritual experiences that Christians might call closeness to God and atheists might call an awareness of themselves.

'This finding indicates that spiritual experiences are likely associated with different parts of the brain,' said Johnstone.



## Alcohol use into 30s affects perceptions

By JANESE SILVEY

Saturday, April 21, 2012

Those who continue to consume a lot of alcohol into their 30s often see themselves as more immature than peers who kicked the heavy drinking habit while still in their 20s.

**That's from a new University of Missouri study conducted by Rachel Winograd, a doctoral student in psychology, and her adviser, Kenneth Sher, a curators' professor of psychological sciences.**

The two relied on data collected from a group of people Sher has studied since they were college freshmen in 1987. When 25-year-old adults were interviewed, alcohol use problems did not seem to correlate to self-reported feelings of immaturity. Surveyed again at 29 and at 35, the subjects who showed signs of alcohol dependence also reported feeling immature for their age.

"We interpreted our findings to suggest that, at 25, drinking is more culturally acceptable," Winograd said in a statement. "Young adults are out at the bars with their friends, and drinking is a bonding experience. They also view blacking out, vomiting and drunk driving as more acceptable because peers are behaving similarly. But by 29, when many of their peers have settled down, individuals who still drink heavily may start to view themselves as 'Peter Pans' of partying, who never fully matured."

The results could be useful in helping young adults realize consequences if they continue to drink.

"People in their early 20s who accept their own heavy drinking and experience alcohol-related consequences may not realize that these behaviors can be associated with identity issues later on," Winograd said. "We can apply this research to nip the problem in the bud and help young adults become aware that their alcohol use behaviors may conflict with their long-term goals."

The study also could help older drinkers understand their feelings and how cutting back on alcohol can help them feel more mature, she said.

The study, "Do People Who 'Mature Out' of Drinking See Themselves as More Mature?," was published in the journal *Alcoholism: Clinical and Experimental Research*. Andrew Littlefield, a psychology doctoral student, also co-authored the report.



## Rolla faculty group takes no action on benefits resolution

By JANESE SILVEY

Friday, April 20, 2012

**ROLLA — Professors at the Missouri University of Science and Technology yesterday failed to vote on whether they want the University of Missouri System to provide domestic partner benefits.**

The Faculty Senate was expected to take action on a resolution calling for benefits to be expanded to both same-sex and unmarried heterosexual couples. When wording was changed to include same-sex couples only, Professor Bill Fahrenholtz questioned whether there was a quorum, essentially ending the meeting when leaders discovered they were six people shy of the 26 members needed.

"We've voted on a hundred different things, but now because this issue is in front of us, we're worried about a quorum," Professor Daniel Forciniti said. "This sucks."

Missouri S&T is the only UM System campus not to have a resolution asking administrators to extend benefits to same-sex couples. Yesterday, MU faculty members Leona Rubin and Joe Parcell were in Rolla to argue that doing so makes good business sense — the majority of Missouri S&T peer institutions provide them.

Based on comments, there appeared to be support among Missouri S&T's Faculty Senate for benefits for gay and lesbian couples. But some professors said they surveyed their colleagues and did not find support.

"I polled my department, and there were strong negative feelings against it," Fahrenholtz said, adding he would have voted against it to represent them.

Much of yesterday's discussion revolved around whether benefits also should be provided to unmarried straight couples. Doing so would be the most equitable way to support nontraditional families, said S.N. Balakrishnan, a professor in line to be the next Senate president. "There's nothing wrong with taking the lead on fairness," he said.

Others, though, thought adding opposite-sex couples to the language would confuse the issue because all other campuses approved resolutions for same-sex couples only.

After the meeting, Professor Lance Haynes told the Tribune he doesn't want the campus to be perceived as being against domestic partner benefits for gay and lesbian couples. "I don't believe for a minute that the majority is opposed to this" he said.

MU faculty in 2010 considered a plus-one option that would have allowed employees to add one adult to the plan, regardless of relationship or gender, but determined doing so would be too costly. Providing benefits to same-sex couples is expected to add about \$1 million to the UM budget.

UM President Tim Wolfe is expected to take a recommendation on the issue to the Board of Curators by the end of this year and had hoped Rolla would take action before then. Rubin said she thought the issue would be discussed at the board's June meeting, but it's unclear whether Rolla will have a chance to vote on a resolution before then. Faculty Senate President Michael Davis said he doesn't plan to call a special meeting nor does he plan to put it on the agenda for the senate's next meeting in June.

In the meantime, one longtime Rolla professor said she would leave if an opportunity came up at a university that provides domestic partner benefits. Susan Murray married her spouse in Canada before taking the job at Missouri S&T 18 years ago. She told Faculty Senate members she spends \$10,000 to \$12,000 a year on health coverage. "We should be leaders," she said. "This is the right thing to do."



## UM associate VP job won't be filled

Friday, April 20, 2012

**University of Missouri System President Tim Wolfe is shedding one administrative position from the payroll.**

Cindy Pollard, associate vice president of strategic communications, is leaving her post to work for the Association of Public and Land-grant Universities, Wolfe announced in an email to colleagues yesterday. When she leaves next week, Wolfe said, he is eliminating the position in light of funding shortfalls.

The vacancy will leave Wolfe with seven vice and associate vice presidents. Pollard's salary is \$163,200, according to UM's most recent salary report.

Pollard helped create the "Advancing Missouri" series that showcases research, teaching and Extension services in videos presented to the Board of Curators and featured online. She said this morning she plans to apply that message in her new role, helping the association spread the word about how land-grant universities help their states.



## MU angel investors fund startup

By JACOB BARKER

Friday, April 20, 2012

**It took about six months of due diligence before Katie Chitwood, John Field and their colleagues decided they were willing to put up \$30,000 for a University of Missouri startup that makes a long-lasting human tissue filler.**

But it's typical for angel capital funds to spend months vetting a company and its leaders before making a high-risk investment in an unproven business. What's not typical is for students to be doing the vetting.

MU's Student Angel Capital Program, though, gives about 15 students the chance to get experience running an angel capital fund, complete with a pot of money worth more than \$100,000. Yesterday, Chitwood, an MU junior studying accounting, and Field, a senior accounting major, held up an oversized check at a luncheon yesterday to announce the fund's first investment.

"It's a unique model and a program we're really very proud of," said Joan Gabel, dean of the business college.

Although the fund functions as a class through the college's department of finance, Chitwood and Field, co-presidents of the fund, coordinate most of its activities. "We probably act more like a fund than a class," Field said.

It does have a faculty adviser, assistant teaching professor W.D. Allen, and it meets like a class twice a week. Although he does assign some reading at the beginning of the semester and gives a few lectures, Allen said that much of what the class does is outside the classroom, such as attending events held by groups such as Regional Economic Development Inc. and Centennial Investors. Student work revolves around vetting the funding proposals that come to it, usually about 15 per semester, Allen said. "It's just the standard process any VC, or private equity guy, or angel would go through," Allen said.

The student fund is part of local angel capital group Centennial Investors, and the students help the group perform due diligence on many of the proposals it gets. About two-thirds of the leads the student fund gets are through its involvement with Centennial, Chitwood said, but the group is working to rebrand its website and reach out to generate more of its own leads.

The idea was hatched by two of Allen's former students, Kyle Cleeton and Ryan Wenk, in late 2010. After bringing Allen on board, they began soliciting donations and made a successful proposal that year for a \$50,000 grant from the Ewing Marion Kauffman Foundation. Since the fund's first semester as an official class in spring 2011, it also has raised about \$80,000 in donations from MU alumni, Allen said.

"The support has just been amazing," he said. "To a man, there isn't anyone on campus who isn't supportive of what we're doing."

The investment announced yesterday is for EternoGen, a startup working on a new soft-tissue filler used in cosmetic, orthopaedic and cardiovascular medical procedures. The student fund isn't the only group that has taken an interest in EternoGen. The company was targeted in February by the university's new Enterprise Investment Program, which could provide as much as \$200,000 to the company. It also will receive a \$100,000 investment from a Missouri Technology Corp. fund and \$200,000 from local angel capital group Centennial Investors.

Right now, Allen said, the fund is too small to have the critical mass of capital many ventures need. But that could change if its investments are successful.

"If we get enough assets under management, we can start doing deals on our own," he said.