MU battle over nuclear engineering moves abroad

January 26, 2013 12:37 pm • Associated Press

Nuclear engineering professors at the University of Missouri have spent the past year wondering why the school decided to shut down their program and instead move its functions elsewhere on campus.

Now they think they have the answer: the lure of international graduate students and their tuition dollars from China and other countries.

Opponents of the planned closure of the Nuclear Science and Engineering Institute point to a fall semester meeting of graduate faculty at which electrical and computer engineering professor John Gahl touted the benefits of foreign student recruitment.

Gahl works in the College of Engineering, which would take over the functions of the institute from the university's graduate school. Graduate dean George Justice gave the research institute's four professors just three days' notice in March 2012 that their program would close, though the school later eased away from the timeline to allow currently enrolled students to complete their degrees. The university has stopped accepting new nuclear engineering students while it attempts to resolve the dispute.

"This is all being driven by dollars, not standards," said institute professor Sudarshan Loyalka. "They saw they could make money off nuclear engineering."

The institute's fate has escalated into broader debates about faculty governance, with critics comparing the university's handling of the matter to the contretemps over phasing out the University of Missouri Press' operations a decision that was later reversed by University of Missouri system President Tim Wolfe in response to the unanticipated public outcry.

Gahl and university administrators counter that the institute, which was formed in 2002, has long been a concern.
In May 2010, an external review of the program by three professors from other universities concluded that the NSEI suffered from a "lack of leadership ... is not focused in research and academic direction, does not have any true strategic plan (and) has no strong national profile or recognition."

The review called NSEI "a rather dysfunctional organization that has not lived up to its original promise" and noted "considerable personal bitterness between the NSEI current faculty and other units and individuals across campus."

On Thursday, the university's Faculty Council voted to ask Chancellor Brady Deaton to re-open admissions to NSEI while preserving its academic and research functions. That comes after Loyalka and two colleagues wrote to Deaton asking for Justice's ouster for "working consistently behind our backs."

Loyalka called the College of Engineering's desire to boost international enrollment a cash grab that could harm the university's academic rigor. As foreign student enrollment on U.S. campuses continues to surge, some worry that those universities will attract poorly prepared students with limited language skills, often aided by profit-seeking recruiters hired by student-hungry schools.

"They have some motivation to generate tuition dollars by recruiting foreign nationals," said Ryan Myer, a private contractor in Washington state who earned his doctorate in nuclear engineering at Missouri in 2007. "It really seems like an effort to steamroll this through."

On Friday, Gahl said his comments from the October 2012 graduate faculty meeting were being taken out of context. The university is interested in luring foreign students to study nuclear engineering, he acknowledged, but not at the expense of crowding out students from Missouri and elsewhere in the U.S.

"We ought to have one of the biggest and best nuclear engineering programs in the country," he said, citing the university's nuclear research reactor, the nation's largest on a college campus. "Right now, we don't have that."
Questions About Torture: What The University Of Missouri Should Ask A Gitmo Psychologist

This month marked 11 years since the opening of the infamous prison camp at Guantanamo, where over a hundred men, many innocent, remain indefinitely detained by the U.S. while hundreds of others have had their lives ruined. The national opening of Zero Dark Thirty and its controversial interpretation of torture's benefits at the hands of U.S. forces ironically merged with this distressing anniversary. In the midst of these events—which have reignited public interest in the lack of accountability for torture and other violations of international laws—news broke that Dr. Larry James, a senior intelligence psychologist at Guantanamo during a time of the worst documented abuses, was on the short list for a high-level administrative position at the University of Missouri.

We write because a few years ago, Wright State, a public university in the state of Ohio, hired Dr. James as Dean of its School of Professional Psychology. Like most Ohio residents, where we both lived at the time, we did not learn about his hiring until after the fact. Shortly after, the state psychology board issued Dr. James a license to treat patients in Ohio. Concerned, we did our own research. Attempting to reconcile Dr. James's story with the public record, we spent over a year carefully examining declassified government documents, news accounts, and testimonials from other service members, intelligence officers, former and current detainees, and their counsel. Dr. James's story of ending abuse and protecting prisoners from harm simply did not check out. Instead, we found alarming evidence that his team of interrogation consultants were integral to the cruel treatment of boys and men in Guantanamo. Indeed, Dr. James' own statements were internally inconsistent and, on their face, seemed to violate ethical prohibitions against misrepresenting his own professional experience and breaching confidentiality. Based on this research, we asked the state psychology board to investigate Dr. James's fitness to practice—a request that it refused, responding that it was "unable to proceed" and offering no reason for its inaction.

The people of Missouri are more fortunate than the people of Ohio: concerned faculty and press have brought Dr. James's candidacy into the public light, giving the search committee, the University of Missouri community and others affected an opportunity to examine the candidate's record openly and thoroughly before making this important decision. We write in the belief that the evidence we have compiled is relevant to this discussion, and with the hope that the University of Missouri will learn from Wright State and the Ohio Psychology Board's mistakes. The Columbia Missourian reports that the search committee is scheduled to interview Dr. James in early February. We highlight below some lines of inquiry that we think the committee would be remiss not to pursue.

If Dr. James was "not involved in any of those horrible things" in Guantanamo and he was instead "on hand to clean up issues related to detainees and personnel working with detainees," as well as to write "policies so other abuses would not occur to anyone in our care," how does he explain the fact that, in the midst of his first deployment at Guantanamo, the policy that was in fact written was the Camp Delta
According to the SOP, "the purpose of the Behavior Management Plan is to enhance and exploit the disorientation and disorganization felt by a newly arrived detainee in the interrogation process ..." During the first two weeks at Camp Delta, the detainee was kept in isolation, denied contact with the International Committee of the Red Cross and Chaplain and was denied a Koran, prayer beads, and prayer cap. After the initial two weeks, the detainee remained in isolation for another two weeks. All these actions were in violation of international law as well as Dr. James's Code of Ethics. What is Dr. James's explanation of these policies?

Dr. James's personal bio of himself states that he served as Chief Psychologist of the Joint Task Force at the U.S. Naval Station at Guantánamo Bay, Cuba in 2003. Dr. James's admission that he was known as "Biscuit 1," along with military policy documents specifying that "BSCT1" was the designation for the Chief of the Behavioral Science Consultation Team (BSCT), strongly suggest that he led the Guantánamo BSCT at this time. Citations are detailed in par. 3 of our 2010 Board Complaint.

Given Dr. James's statement, "[I] was not involved in any of those horrible things that occurred at any of those places like in Cuba," what does he consider to be "horrible things?"

From our perspective, it is clear by his own accounts that he was, indeed, "involved" in "the horrible things that occurred ... in Cuba." For example, in his memoir, Fixing Hell, Dr. James recounts calmly observing guards and interrogators wrestle a screaming, near-naked man on the floor while trying to put on female lingerie and choosing not to immediately intervene -- or to report or sanction the men for the abuse. This is detailed, along with quotes and citations to his book, in par. 37-42 of the above-referenced Complaint.

In the same book, he also admits to leading the team responsible for detaining and interrogating the three young boys from Afghanistan (see par. 44-48 of Complaint). These boys, whose estimated ages were between 12-14, were imprisoned, flown across the world (blindfolded, according to one of the boys) and held incommunicado without access to family or counsel for almost a year. By his own account, James coordinated the "transfer" and then oversaw all aspects of their interrogation, detention and even treatment, although he warns: "There was no mistaking our intentions..." meaning the health care treatment was meant as preparation for interrogation. These are clear violations of international law, human rights, and psychological ethics--and most people's moral standards. The boys were released without ever being charged.

Perhaps Dr. James doesn't find these "things" to be "horrible." Perhaps he doesn't find "horrible" other conduct that has been documented as widespread and, in some cases, official policy during the period that he was responsible for consulting on interrogation policy at the prison: rape and death threats; sexual, cultural, and religious humiliation; forced nudity; sleep and sensory deprivation; over-stimulation; extreme isolation; short-shackling into painful, stress positions for hours; and physical assault.

The evidence indicates that abuse of this kind was systemic, that BSCT health professionals played an integral role in its planning and practice, and that Dr. James, as the Chief Psychologist of the BSCT, at minimum knew or should have known it was being inflicted.

Dr. James's recent statement to the Missouri press that "I did not have command authority. I was a consultant to a commanding general," conflates two concerns. First, the more significant question to ask Dr. James is whether, as head of the Behavioral Science Consultation Team, he had command authority...
over his team of psychologists and psychiatrists at Guantánamo? Did he have the power and duty to stop interrogations?

We do not allege that Dr. James had command authority over the interrogators, but that in his role as head of the Behavioral Science Consultation Team, his team consulted on the planning and implementation of interrogation tactics that were at the very least unethical. Evidence indicates that in this role Dr. James did have command authority of his BSCT team and the de facto authority to stop abusive and torturous interrogations.

As an example, on April 22, 2003, a BSCT psychiatrist allegedly under Dr. James's command recommended that a man be forcefully and repeatedly lifted and dropped to the floor as a means of keeping him awake and "install[ing] inter[ogator's] dominance in [the] room." A contract interrogator and a contract analyst observing the incident from a neighboring booth reported that, while the intelligence team watched, two guards slammed the man to the floor as many as 25-30 times using force "adequate to cause severe internal injury," (see par. 30-36 of Complaint).

Did Dr. James have command authority over this member of his team? Was he responsible for the abuse cited above? Did he have a responsibility to stop the interrogation, or a duty to report the action?

Second, why does Dr. James give prominence to his role at Guantánamo in self-aggrandizing claims, yet deny any power when others attempt to hold him accountable, as he has done in his statements to the Missouri press?

In a posting to the listserv of the American Psychological Association Presidential Task Force on Psychological Ethics and National Security in 2005, Dr. James wrote, "the commanding general also put me in the 'IG' role, thus, I had oversight over everything (sic)... the second thing I requested was to have legal authority to STOP any interrogations/interviews when I thought something was inappropriate. Meaning, a psychologist (me) had veto authority to stop anything that I thought was harmful, dangerous, unethical, illegal, etc. The general easily concurred with this request. It allowed me to work for the military client, but also ethically look out for the welfare for the detainees as well."

On what basis does Dr. James claim to have been "thoroughly investigated ... and ... found completely innocent"?

As we have noted and others have reported (see, e.g., here), none of the sanctioning bodies has actually conducted meaningful investigations or hearings. The Ohio Board responded that it was "unable" to proceed, without further explanation; indeed, that Board has spent the last 18+ months in court defending its right to not investigate Dr. James. Meanwhile, throughout its own lengthy legal battle, the Louisiana Board steered clear from advancing a position on Dr. James's conduct. Instead, it argued (without evident legal basis) that the statute of limitations had expired and thus that, it, too, was unable to look into the matter.

To say that James "won" the proceedings before the Ohio Board (as Tom Warhover at the Missouri described it) is a legal stretch. If James "won" the proceedings before the Ohio Board, it could not have been based on his "innocence," when there was no meaningful inquiry into his conduct. If James "won," it is because the Ohio Board--like other licensing boards, the American Psychological Association, the U.S. Department of Justice and other institutions empowered to hold individuals accountable for torture--chose the easy way out. It ducked the issue, confident it could take refuge in a climate where "looking forward, not backward" is the mantra of choice.
Dr. Michael Pullis, search committee chair from the University of Missouri, has said, "I understand the allegations, but that is not sufficient to discriminate against anyone." But when presented with disturbing evidence from credible sources, it is not discrimination to expect certainty, beyond doubt, that a candidate to a top educational post does not bear responsibility for the torture of others, to expect certainty that he has not been dishonest with his employers, faculty, students, professional boards and the American people. To do otherwise risks sending the message that the University of Missouri does not take seriously allegations of abuse and dishonesty. The search committee should consider how such a message will impact the university community, in particular, survivors of sexual, child, domestic and all other forms of abuse and violence.

This piece was co-written with Dr. Trudy Bond, Ed.D. She is an Ohio-based psychologist, where she has been treating patients for 30 years, and is a member of the Coalition for an Ethical Psychology.
Delegation talks priorities with MU alums

By Rudi Keller

Friday, January 25, 2013 at 2:00 pm

Medicaid expansion and a state bond issue are the two most important legislative issues for the University of Missouri and Columbia generally, state Rep. Chris Kelly said Thursday at a legislative forum sponsored by Boone County alumni and other MU support groups.

Both would bring a big economic boost to Columbia, he said. The bond issue has a better chance than it has had any year since 2009, he said, but Medicaid expansion, which is part of the federal health care overhaul, is a more difficult issue.

"The politics are extremely interesting and extremely tough for thoughtful Republicans, so you ought to give them a chance," Kelly, D-Columbia, said. "And that is not an oxymoron."

Kelly and the other five members of Boone County's legislative delegation took part in the forum at Harpo's. It was the 11th annual event sponsored by the Boone County chapter of the Mizzou Alumni Association, the Arts & Sciences Alumni and the Mizzou Legislative Network. The forum provides an opportunity for informal conversation and getting to know the delegation, said Wally Pfeffer, chairman of the legislative network. "What we gain more than anything is firsthand experience with the lawmakers," he said.

Kelly was joined by Sen. Kurt Schaefer, R-Columbia, and Reps. Stephen Webber, D-Columbia; Caleb Jones, R-California; John Wright, D-Rocheport; and Caleb Rowden, R-Columbia.

With Schaefer chairing the Senate Appropriations Committee and Kelly, Webber and Rowden on the House Budget Committee, the delegation has a powerful say in state spending issues.

"We have got to manage expectations, but I think we are going to have a great year for Boone County," Jones said.

Jones also has accumulated considerable clout in the House: He is chairman of the House General Laws Committee and vice chairman of the Rules Committee, which decides what bills reach the floor for debate.

Medicaid expansion would add about $20 million annually to the local economy, Kelly said. If lawmakers do not accept the federal aid that will pay for it, other aspects of the health care law designed to cut federal costs could take as much as $28 million out of the area, he said.
Columbia thrives on money spent by MU and the health care industry. Schaefer said he is encouraged because, for the first time since he took office in 2009, he's not hearing that Gov. Jay Nixon intends to cut higher education funding. "Unlike the last four years, that is a bit of an anomaly," he said.

Schaefer said he, too, is encouraged by support for a bond proposal. Schaefer has sponsored a plan that would borrow $950 million, with about $750 million set aside for college and university projects.

With demands being made to fund roads as well, Kelly said, MU boosters must be ready to withdraw their support if necessary. "The MU alumni association has to say, if we are not in this, we're not supporting it."

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Posted in Politics, Education on Friday, January 25, 2013 2:00 pm.
Missouri lawmakers demand explanation on reactor funding

By Jacob Barker

Friday, January 25, 2013 at 2:00 pm Updated: 2:00 pm, Fri Jan 25, 2013.

Missouri's congressional delegation is demanding answers from the U.S. Department of Energy as to why the department passed over a funding application from Ameren Missouri and engineering firm Westinghouse to design and build small nuclear reactors in the state.

In a letter Wednesday sent to DOE and Energy Secretary Steven Chu, Missouri's two senators and five members of its U.S. House of Representatives delegation expressed "serious concern" over the department's decision to award funding to only one partnership. That award, announced Nov. 20, went to the Tennessee Valley Authority and Babcock & Wilcox, shocking Ameren, the University of Missouri and others involved in the Missouri effort.

The letter's signatories — Sen. Claire McCaskill, D-Mo., Sen. Roy Blunt, R-Mo., and Republican Reps. Sam Graves, Vicky Hartzler, Billy Long, Blaine Luetkemeyer and Ann Wagner — asked why DOE did not grant awards to more than one partnership when its 2013 budget request suggested it was looking for two.

"By issuing a single award DOE is contradicting its own rationale and justification for the program," the letter said. "It also ignores Congressional intent that two awards ensure the benefits of competition in the U.S., which has been shown to increase safety, control costs and spur innovation in the industry."

The delegation asked for an answer by Feb. 15. The department is reviewing the letter but did not yet have a response.

Early last year, DOE announced it would award as much as $452 million to design and build small modular reactors, or SMRs, touted by many as a lower-cost alternative to traditional large nuclear reactors, such as Ameren's in Callaway County.

A coalition of government officials, university administrators and utilities quickly rallied around Ameren and Westinghouse's proposal. Mid-Missouri officials liked the plan because of Ameren's indication that it would eventually build an SMR at the Callaway nuclear site.
When DOE announced the Tennessee Valley partnership would be funded, it said it would open future funding opportunities, but it has not given a timeline. Neither has it said how much of the $452 million it will award to the Tennessee Valley partnership.

Ameren spokesman Bryan Daniels said the St. Louis-based utility remains hopeful but is in the dark about the DOE's plans.

"We have not received any information from the DOE regarding next steps in the process," he said.

If DOE does move forward, however, it would issue a new funding opportunity announcement focused on "SMR innovation," the letter said. The Missouri delegation wants to know why DOE said it will offer a new funding opportunity when it could have just changed the criteria for funding in the original. It also questions the focus on innovation rather than commercialization, one of the program's primary goals. "As you are well aware, the history of the nuclear industry is cluttered with 'innovative' designs that never come close to successfully licensing, let alone providing power to meet the nation's needs," the letter said.

Ameren and Westinghouse's proposal met or exceeded all of DOE's criteria for the program, the delegation's letter said.

"We have yet to be provided a reasonable explanation regarding why DOE did not select the Westinghouse/Ameren proposal," they wrote.

This article was published in the Friday, January 25, 2013 edition of the Columbia Daily Tribune with the headline "Lawmakers demand explanation on reactor funding."

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Posted in Politics on Friday, January 25, 2013 2:00 pm. Updated: 2:00 pm.
HIV research eyes enzyme

Team received grant from NIH.

By Jodie Jackson Jr.

Sunday, January 27, 2013 at 2:00 am

A team of scientists led by a University of Missouri researcher believes they have found a new "soft spot" in the structure of HIV, the virus that causes AIDS.

"If we know what the lock looks like, we can make the key," said Stefan Sarafianos, who conducts research at the Bond Life Sciences Center.

Sarafianos is working with researchers at the University of Pittsburgh and University of Minnesota to design drugs that target an enzyme in HIV that currently is not targeted by other drugs. Sarafianos and his colleagues believe they know enough about the structure of the RNase H enzyme that the National Institutes of Health awarded a $3.4 million grant to fund the new drug development program.

The aim is to produce a drug that will be available as a new treatment when HIV mutates to become resistant to current drugs. Sarafianos has in mind a new drug that would inhibit the progression of the virus so that HIV could become a more "manageable disease," in the same way that patients with diabetes and other chronic illnesses manage those conditions. "You can't cure HIV, you can inhibit the viral load of HIV" in a patient, he said. "You do not eradicate the virus. The virus is there, in very, very small amounts, but it is there."

More than 1.1 million people in the United States live with HIV infection, and one in five are unaware they are infected. HIV is one of the world's leading infectious killers, claiming more than 25 million lives over the past three decades.

Michael Parniak, co-investigator for the NIH-funded project and professor of microbiology and molecular genetics at the University of Pittsburgh, said there are no drugs currently in development for RNase H, one of four HIV enzymes, partly because it is difficult to target. Parniak has identified more than 3,000 leads for compounds that could target the enzyme, and he said that's where Sarafianos' expertise in crystal structures will come into play.

"He has the perfect combination of skills and knowledge to move this project forward," Parniak said. "If anyone can solve this, it's him."
The compounds that show the most promise for development will be synthesized at the University of Minnesota.

The new project also gave Sarafianos an opportunity to tout the "multiple returns" on research grants and the amount of money awarded for HIV/AIDS research.

"We really make sure we're good stewards of public funds," Sarafianos said. "Research is not a luxury. It is an investment. Yes, we give a lot of money for this disease, but you get it all back" in benefits to society.

The perplexing HIV enzyme targeted by the research shares traits common with Hepatitis B. That virus kills roughly 600,000 people worldwide every year and some 300 million people are infected.

"We can make strong headway" toward new Hepatitis B drugs, Sarafianos said, "with the same investment."

Sarafianos, an associate professor of molecular microbiology and immunology in the MU School of Medicine, said the HIV research team believes it has promising leads, but the process is far from clinical trials and final development of a new drug. "You're talking many years," Sarafianos said. "There are no magic bullets out there. It's hard, hard work."

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Posted in Local on Sunday, January 27, 2013 2:00 am.
A person's Facebook profile may reveal signs of mental illness that might not necessarily emerge in a session with a psychiatrist, a new study suggests.

"The beauty of social media activity as a tool in psychological diagnosis is that it removes some of the problems associated with patients' self-reporting," said study researcher Elizabeth Martin, a psychology doctoral student at the University of Missouri. "For example, questionnaires often depend on a person's memory, which may or may not be accurate."

Martin's team recruited more than 200 college students and had them fill out questionnaires to evaluate their levels of extroversion, paranoia, enjoyment of social interactions, and endorsement of strange beliefs. (For example, they were asked whether they agreed with the statement, "Some people can make me aware of them just by thinking about me.")

The students also were asked to log onto Facebook. They were told they would have the option to black-out parts of their profile before some of it was printed out for the researchers to examine.

"By asking patients to share their Facebook activity, we were able to see how they expressed themselves naturally," Martin explained in a statement. "Even the parts of their Facebook activities that they chose to conceal exposed information about their psychological state."

Participants who showed higher levels of social anhedonia -- a condition characterized by lack of pleasure from social interactions -- typically had fewer Facebook friends, shared fewer photos, and communicated less frequently on the site, the researchers found.

Meanwhile, those who hid more of their Facebook activity before presenting their profiles to researchers were more likely to hold odd beliefs and show signs of perceptual aberrations, which are irregular experiences of one's senses. They also exhibited higher levels of paranoia.

"However, it should be noted that participants higher on paranoia did not differ from participants lower in paranoia in terms of the amount of personal information shared," the researchers wrote in their study detailed Dec. 30, 2012, in the journal Psychiatry Research. That finding suggests this group might be more comfortable sharing information in an online setting than in the face-to-face interactions with the experimenter.

The researchers said information culled from social networking sites potentially could be used to inform diagnostic materials or intervention strategies for people with mental health issues.
Views on warming shaped by word use

By TIMOTHY WALL

Saturday, January 26, 2013 at 2:00 am

Public acceptance of climate change might have been influenced by the rate at which scientific words moved into the mainstream, said anthropologist Michael O'Brien, dean of the College of Arts and Science at the University of Missouri. A recent study of word usage in popular literature by O'Brien and colleagues documented how the usage of certain words related to climate change has risen and fallen over the past two centuries. Understanding how word usage affects acceptance of science could lead to better science communication and a more informed public.

O'Brien's study found that, by 2008, several important terms in the discussion of climate change had entered popular literature from technical obscurity in the early 1900s. These terms included: biodiversity, the degree of variation in life forms within a given area; Holocene, the current era of the Earth's history, which started at the end of the last ice age; paleoclimate, the prehistoric climate, often deduced from ice cores, tree rings and pollen trapped in sediments; and phenology, the study of how climate and other environmental factors influence the timing of events in organisms' life cycles.

Not every term was adopted at the same rate or achieved the same degree of popularity. "Biodiversity," for example, came into popular use quickly in only a few years in the late '80s and early '90s. Other terms are still relatively uncommon.

To observe the movement of words into popular literature, O'Brien and his colleagues searched the database of 7 million books created by Google. They used the "Ngram" feature of the database to track the number of appearances of climate change keywords in literature since 1800.

The study — "Word Diffusion and Climate Science" — was published in the journal PLOS ONE and can be viewed at http://is.gd/yIRRVA. Co-authors included R. Alexander Bentley of the University of Bristol, Phillip Garnett of Durham University and William Brock of MU's Department of Economics.

Timothy Wall is a research information specialist with the MU News Bureau. He can be reached at 882-3346 or walltj@missouri.edu.
Local interest in natural gas technology for vehicles might open new doors

By Andrew Denney

Saturday, January 26, 2013 at 2:00 am

The city of Columbia might be a test case for cutting-edge improvements to natural gas-powered vehicles as it prepares to bring in a compressed natural gas station and experiment with other advanced natural gas technologies.

The city is working with Clean Energy, a natural gas distribution company co-founded by oil magnate T. Boone Pickens, to establish a compressed natural gas station in northeast Columbia. Clean Energy is setting up a nationwide network of CNG stations.

Meanwhile, local businesses have taken notice and have begun to kick the tires on CNG-powered vehicles.

Natural gas, which is in abundant supply in the United States, is cheaper than diesel, and changes in price have proven to be less volatile. Additionally, natural gas burns cleaner, emitting up to 40 percent fewer greenhouse gases than gasoline, according to the U.S. Department of Energy.

Despite its benefits, natural gas is at a disadvantage when compared with gasoline because of a limited selection of vehicle models that use it. When considering vehicles for conversions or new purchases, the city of Columbia and local businesses have focused mainly on heavy vehicles running on compressed natural gas, which is stored in cylindrical or spherical tanks and under a pressure of up to 3,600 pounds per square inch.

A group of University of Missouri researchers hopes to make natural gas available to a wider array of vehicle models through the development of absorbed natural gas, or ANG, technology, which can provide the same amount of energy as compressed natural gas tanks while taking up less space and requiring less pressure — about 500 psi — thus making the tanks more suitable for lighter vehicles such as passenger cars.

At the same time, another team of MU researchers is seeking to make trips to the gas station — at least for natural gas-powered vehicles — a thing of the past with the development of home-fueling stations that can be linked into the existing natural gas infrastructure.
Galen Suppes, an MU chemical engineering professor working to develop affordable natural gas home-fueling stations, said with emerging natural gas technologies, he could foresee an end to the need to import oil into the United States — a change he hopes to see within his lifetime.

“It's going to change our country,” Suppes said. “It's going to make our lives better.”

Although wider use of natural gas is a blessing for some, it concerns others because of hydraulic fracturing, a controversial method of extracting natural gas from rock formations with the use of pressurized fluids. The practice has raised concerns from environmental advocacy groups and landowners about its effects on groundwater.

During a lecture on alternative energy at the TEDxCoMo event in October, Tom O'Connor, a member of two city of Columbia citizen energy boards and a Tribune columnist, called fossil fuels the “heroin of energy.” Although he didn’t specifically mention natural gas during that lecture, O’Connor later said it should be included in the description. The use of natural gas has been pushed by oil industry figures and keeps users dependent on large, centralized energy systems.

“It seems like a big, bold, expensive step sideways,” said O’Connor, a member of both the city’s Environment and Energy Commission and Water and Light Advisory Board, of the city’s effort to use more natural gas for vehicle fuel.

The price of natural gas — unlike that of diesel fuel — has remained relatively stable in recent years, and that has helped businesses, governments and school districts start looking to ditch the diesel and turn to natural gas, either through tank conversions or new vehicle purchases.

Although there has been increasing interest in vehicles that run on natural gas or other alternatives to gasoline, the idea itself is not new. According to the U.S. Department of Energy website, vehicles that run on propane, or “autogas,” have been in operation worldwide for decades. Propane is a by-product of natural gas, and petroleum production and can be found at 2,534 stations across the United States — excluding private stations — compared with 585 compressed natural gas stations.

Local phone, TV and Internet service provider CenturyLink began a trial period with autogas for 20 of its vehicles more than two years ago, Greg Gaffke, a market development specialist for the company, said in December. Gaffke has since retired from the company.

CenturyLink has a fueling station at its LeMone Industrial Boulevard facility for its autogas-powered vehicles, which are Ford E150 Roush conversion vans used to make service calls. Gaffke said the company had not determined how much it has saved from making the switch.

Kevin Czaicki, CenturyLink’s area operations manager for north-central Missouri, said the company’s trial with the autogas-powered vans will conclude in a few years. At that point, CenturyLink will assess whether autogas is cost-effective.
“We absolutely want to come up with something that is efficient, environmentally friendly and makes sense for the community,” Czaicki said.

But natural gas burns cleaner than propane, and according to the Department of Energy, propane takes more energy than gasoline to drive the same distance. An October alternative fuels price report also found that propane was slightly more expensive: The average propane cost in the United States was $2.56 per gallon, compared with $2.12 per gallon for compressed natural gas. Average prices for gasoline and diesel at that time were $3.82 per gallon and $4.13 per gallon, respectively.

Kansas City has had a city compressed natural gas station since 1997 and uses about 300 natural gas-powered vehicles, everything from trash trucks to sedans, said Scott Vazzana, business development manager for Clean Energy. Lambert-St. Louis International Airport also has operated a CNG fueling station since 2000, and the airport has about 130 CNG-powered vehicles in use.

Columbia Public Works Director John Glascock said the city would prefer CNG to autogas because the city already is served by Ameren Missouri natural gas lines. Propane typically is distributed using stand-alone tanks, and that would require new infrastructure.

“We’re not investing any infrastructure, basically, except for the land,” Glascock said. He said the city has discussed alternative vehicle fuels for its fleet for several years, but officials had concerns about the initial investment. That changed, he said, when Clean Energy approached the city and offered to construct a CNG station here.

“This is a way for the city to get in slowly,” Glascock said.

Eric Evans, the city of Columbia’s fleet operations manager, said the city likely would incorporate CNG-powered vehicles into its fleet through new vehicle purchases. He said the city likely would first look at vehicles with payload capacities of three-quarters of a ton or more, but nothing has been finalized.

“We’ve got to get the station in place before we do anything,” Evans said.

As the city works to finalize a deal with Clean Energy to establish a CNG station, some local businesses are taking notice and also are considering bringing CNG vehicles into their own fleets.

White Knight Transportation, which operates 40 vehicles from its office just east of Columbia near Interstate 70, has expressed an interest in CNG, particularly for its sedans. Those vehicles usually are used to transport the drivers of larger vehicles to the company’s other locations across the state, said Ted Littell, president of the company.
Cooper Snyder, president of Central Concrete Co., said the company has been considering using mixer trucks that run on CNG. The company is so interested in the idea of bringing CNG to Columbia that it offered to sell a 2-acre tract to the city to serve as the site of its CNG filling station. Snyder said that would put the station less than a mile from the company's Columbia plant.

"It makes sense for me to take advantage of it," Snyder said.

On Dec. 3, the Columbia City Council authorized staff to draw up a contract to purchase the Central Concrete Co. property near Vandiver Drive and Highway 63. Evans said a measure to finalize the $300,000 sale might be presented to the council next month.

After final approval of the sale, Evans said the city and Clean Energy will begin working out the details of a contract to operate the station, and that deal also will be subject to the council's approval. According to city documents, $350,000 in city money has been appropriated for the effort, and if the deal with Clean Energy is finalized, the distributor would build and monitor the station while the city would retain ownership. After a deal is approved, Evans said, the city plans to hold a meeting with local businesses to discuss the project further.

Although the expanded use of natural gas to power vehicles could help to reduce emissions, some are concerned about the potential effects of the method used to get to the gas in the first place: hydraulic fracturing, or "fracking," in which chemical cocktails are blasted into rock formations to extract natural gas. A comprehensive study being done by the U.S. Environmental Protection Agency has found that the cocktail usually is composed mostly of water but can include toxic substances such as lead and benzene. The practice is several decades old but has become more widely used as demand for natural gas grows.

The EPA is expected to finish its study by the end of 2014.

Before the city council voted to allow staff to start working on a contract for the CNG station site, council members and members of the public expressed concerns about CNG because of the practice used to retrieve it.

Monta Welch — who is executive director of the Columbia Climate Change Coalition and an organizer for the "People's Visioning" community-based planning initiative — said residents involved with her visioning process opposed the city's decision to go with CNG. "We believe this is the wrong direction for the community," Welch said.

City Manager Mike Matthes said at the meeting that natural gas could be one fuel in a diverse array of energy sources for city vehicles.

When talking about bringing CNG-powered vehicles into its fleet, city officials have focused on acquiring large vehicles such as buses and trash trucks, in part because of the space needed to accommodate CNG tanks.
The city’s fiscal year 2013 capital improvement project list includes the $3 million purchase of 10 CNG-powered trash trucks, a remnant of a proposal last year to change the city’s residential trash collection system from bags to roll carts. The city abandoned that idea after significant opposition from residents.

But a group of MU researchers has been working for the past few years to make the fuel source applicable to lighter-duty vehicles such as passenger cars and forklifts. They hope to achieve that with lighter tanks and ANG technology, which requires a fraction of the pressure needed for CNG tanks and stores natural gas within the surface of carbon briquettes — which act as sponges for natural gas — packed into the ANG tanks.

According to a 2011 presentation by Peter Pfeifer, an MU physics professor who has received grants from the California Energy Commission and Southern California Gas Co. to work on the technology, high-pressure CNG tanks have been tried before in passenger vehicles. In a 2011 Honda Civic GX, a CNG tank takes up the entirety of the sedan’s trunk space.

But Pfeifer said in an interview that MU researchers are looking to the “next generation” of ANG tanks for automobiles and developing lighter and flatter tanks that could easily be installed on the exterior of an automobile. Less energy is required to fill ANG tanks than CNG tanks, and carbon briquettes are made of spent corn cobs, an abundant and inexpensive source for materials, especially in the Midwest.

“We are spending a lot of time with companies that want to commercialize this,” Pfeifer said. He declined to name specific firms, citing confidentiality agreements.

Glascock said the city has been aware of the researchers’ work and is drawing up a letter of intent with an ANG tank manufacturer to offer up a few city vehicles to give ANG tanks a field test. He said the city has not determined which vehicles would be tapped for the new technology, but he said a good use could be for city inspectors.

“We are willing to try it,” Glascock said.

Mike Brooks, president of Regional Economic Development Inc., said establishing a CNG station here would help put the city on the map for companies that use the fuel.

“As companies are traveling across the country and they need to stop and refuel, Columbia will be somewhere they remember,” Brooks said.

If the technology can gain ground commercially, a separate group of MU researchers would like to see it become even more consumer-friendly with the development of more affordable home-fueling stations for natural gas vehicles. The group received $450,000 for working as a subcontractor to General Electric, which received a grant from the Department of Energy to develop home-fueling stations that cost a few hundred dollars — rather than a few thousand dollars, as they are now priced, said Suppes, the MU chemical engineering professor.
Additionally, Suppes said, as the number of natural gas-powered vehicles grows, the stations could help to take energy independence to the consumer level and detach them from a reliance on gas stations, allowing them instead to fuel up with their own natural gas supply.

"You don't have to have all those stations out there," Suppes said. "You can take care of yourself with a home-fueling station."

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Posted in Saturday Business on Saturday, January 26, 2013 2:00 am.
KC corridor is key to region

By Dave Griggs

Saturday, January 26, 2013 at 2:00 am

Regional Economic Development Inc. works with many agencies to promote the advantages of our community. One of these is the Kansas City Area Development Council's KC Animal Health Corridor.

Credit to Kimberly Young, vice president of bioscience development with Kansas City Area Development Council, or KCADC, for providing the following information.

The KC Animal Health Corridor describes an area starting in Columbia and Fulton, includes St. Joseph and Maryville, and stretches to the cities of Manhattan and Emporia in Kansas. The area has the largest concentration of animal health industry facilities in the world, with one-third of the global industry's sales generated by companies in the corridor.

There are at least 220 animal health-related businesses, employing more than 20,000 people in the area. This includes the North American or global headquarters of more than 70 companies; five of the 10 largest global animal health companies; and three of the five largest pet food companies.

From pet nutrition, vaccines and flea and tick collars to research and diagnostics used to detect diseases in food animal populations, the companies within the corridor are doing work that improves the security of our global food supply and the health of our family pets.

The animal health industry can trace much of its roots back to the opening of the stockyards in Kansas City in 1871. The proximity of thousands of head of cattle and hogs required the development of vaccines and other services to maintain the health of what was a large portion of the U.S. food supply at the time.

Today, Kansas is second and Missouri is seventh in cattle and calves inventory in the United States. And within 350 miles of the corridor, there are more than 45 percent of the fed cattle in the United States, more than 40 percent of hogs, and 20 percent of beef cows and calves.

In addition to being one of the anchors of the KC Animal Health Corridor, the area around Columbia and Fulton, including the University of Missouri and William Woods University, are critical cornerstones of the workforce pipeline and research innovation for the industry.
Programs such as One Health that make important connections between human and animal health and the leadership that comes from the Mizzou Advantage strategy are important to the growth and success of the companies in the corridor. Conversely, the area's connection to a national, award-winning economic development strategy, such as the corridor effort, means continued growth and success of initiatives.

REDI works closely with the economic development and civic organizations that manage the KC Animal Health Corridor, including the KCADC, Greater Kansas City Chamber of Commerce and the Kansas City Area Life Sciences Institute. These groups provide job attraction opportunities, legislative advocacy, workforce development and research collaboration for animal health and life sciences professionals.

This is just one great example of the relationships developed to promote our community. We continue to have good prospect activity in this and other industries.

Dave Griggs owns and operates Dave Griggs Flooring America and is former chairman of the board of directors for REDI.

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Posted in Saturday Business on Saturday, January 26, 2013 2:00 am.
Imperfect NCAA is still valuable

January 27

Given the well-known problems of college sports — where money and influence peddling corrupt the world of student-athletes — a referee is needed to set and enforce fair rules.

The NCAA has tried to fulfill that role for decades. The organization has done its job well when it has delivered swift justice, most recently when it came down hard on Penn State University’s football program for the coverup of the Jerry Sandusky pedophile scandal.

And then there’s the Frank Haith matter.

The NCAA for more than 18 months has been investigating Haith, the University of Missouri basketball coach, for his actions when he led the University of Miami program.

The probe has been unconscionably long. And last week the NCAA admitted that the investigation itself had been tainted by how its enforcement division had collected some evidence about the Haith matter.

MU sports fans screamed foul, with good reason. The NCAA’s mistake undercut its credibility.

But pulling the plug on the Haith probe would go too far. If the NCAA has enough evidence gained through legitimate means to raise questions about his actions at Miami, the charges should be made, giving Haith a chance to defend himself.

The NCAA does its job imperfectly — as do too many universities that are supposed to be looking out for the welfare of student-athletes. The NCAA must continue trying to rein in the excesses that plague college sports, but it must do so with higher ethical behavior.
The University of Missouri plans to install a tabletop replica of the Martin Luther King Jr. statue this week at the university’s library.

The university was given a replica statue last year by Ty Christian, a Missouri graduate who was chief marketing strategist on the Martin Luther King Jr. National Memorial Project Foundation.

The statue will be installed during a ceremony Tuesday in the Ellis Library. It will be open to the public.

The Columbia Daily Tribune reports (http://bit.ly/X2iwmq) the bronze replica is 2 feet tall and weighs 30 pounds. It sits on a slate of the same granite used for the national statue.
IT'S AN ISSUE FACING ABOUT two-thirds of bachelor's degree recipients, according to the Department of Education — the increasing weight of student loans. According to the Federal Reserve Bank of New York's Quarterly Report on Household Debt and Credit, student loan debt now stands at $956 billion. That's a 20-percent rate of increase in the past year. Statistics show that the rate of delinquency on these loans is also increasing.

The problem is that student loans can be fairly easy to secure, but they stick with a student, even if they declare bankruptcy. The weight of student loans is also being blamed for issues in the homeowner's market because college graduates are focused on paying for their last four years instead of future homes.

Nick Prewett, the director of student financial aid at the University of Missouri, has some advice for college students who want to stay on top of their finances. He says a lot of students apply for the maximum amount every time, but many students don't need to take out that much. However, he says the average student loan debt for undergraduates at MU is about $11,000, comparable to a new car.

What should someone consider before taking out a student loan? Know your needs. Only borrow as much as you need. Student loan debt is approaching $1 trillion in the U.S. Why do you think that number is so high? What are the long-term consequences of this? The average amount students are taking out hasn't increased, just more students are taking out loans due to declining state support at higher education institutions. If students don't pay off their loans, their credit is affected, they would have federal tax refunds docked and social security docked.

What options do students have after graduation if they can't begin making payments? There's a new program the U.S. Department of Education just started called "Pay As You earn." Ten percent of discretionary income will go toward student loans.

Should students pay off loans early or spread out the payments? It really depends on a student's situation. They want you to focus on the loans with the higher interest rates.

What is the student debt situation like at Mizzou? At the University of Missouri, default rates are very low compared to other institutions. Our rate is about 5.1 percent, and the national rate is about 10.2 percent. When you look at the national average, you're including community colleges and proprietary institutions. It comes down to the ability of students to repay the loans.

What general advice do you have for students and their finances? Skipping a Starbucks latte on a regular basis. Really, just being cognizant of how much they're spending. We talk about the meeting with the office of financial aid as one resource. Also to take a basic budgeting or personal finance class on campus.

How can a student prepare to pay off debt while still in college? Institutions are focusing on financial literacy. We have the office of financial Success, for example. Students should make sure they talk to the Financial Aid Office about what their needs are. It's better to get involved earlier.

We're doing more outreach, going over total loan debt just to help them prepare for paying for their education. Students are encouraged just to have that conversation about how much debt they have. We're going to take a look at what their career path is going to be, how much loan debt they have and how much they need to take out as far as their projected income.

Do you see the amount of student loans increasing in the future? As costs continue to rise, students and families need to find ways [to pay for their education], and student loans help to make up that difference between costs and what their resources are.