

Scientists take a step toward growing cells into replacement joints

By [Mark Johnson](#) of the Journal Sentinel

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Artificial joints, made from metal or ceramic materials, have become a remedy for patients with painful, arthritic knees, shoulders or hips. But scientists are now working toward a more natural solution.

Researchers at University of Missouri and Columbia University are working to develop techniques that would use a patient's own cells to grow entirely new and fully functioning replacement joints. In a paper published in the journal *The Lancet*, scientists describe creating new cartilage in animals that use so-called biological scaffolds in animal joints.

A scaffold was surgically implanted in rabbits with a technique now used for shoulder replacements in humans. In the surgery, the ball part of the ball-and-socket shoulder joints are removed and replaced by a scaffold infused with a growth factor. The growth factor encourages the rabbit's own cells including stem cells to develop into cartilage and bone cells.

"If we continue to prove the safety and efficacy of this biologic joint replacement strategy, then we can get FDA approval for the use of this technology for joint replacements in people," said [James Cook](#), a member of the research team who works at University of Missouri's College of Veterinary Medicine and Department of Orthopaedic Surgery. "We are still in the early phases of this process, but this study gives a big boost to its feasibility."



Mizzou Scientists Experiment With Homegrown Replacement Joints

By Aimee Levitt

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It would be convenient if human bodies were like starfish, able to regenerate missing limbs or anything else they need. We can't yet, but a team of researchers at the University of Missouri and Columbia University may be close to re-growing joints, which could be longer-lasting and better-performing than artificial joints made from metal and plastic.

"Our goal at Mizzou's Comparative Orthopaedic Laboratory is to do away with metal and plastic joints, and instead, regenerate a fully functional biologic joint for everyone who needs one," James Cook, a researcher in Mizzou's departments of veterinary medicine and orthopaedic surgery who contributed to the study, said in a press release.

The research team recently grew new shoulder joints in rabbits using a "bioscaffold" that replaced the ball part of the ball-and-socket joint. The bioscaffolds were infused with a transforming growth factor compound that made the rabbits' existing cells grow into cartilage and bone.

Within three to four weeks, the scientists reported in the medical journal *The Lancet*, the rabbits were up and hopping around and putting weight on the regrown joints, and within four months, the cartilage in the joints was fully-grown, and all the tissue was healthy.

"The device was designed with both biological and mechanical factors in mind," Cook said. "It is unique in design and composition and in how it stimulates the body's own cells. This is the first time we have seen cartilage regeneration using this type of scaffold."

The next step, Cook said, is to implant the bioscaffolds in larger animals, and then, eventually, work up to humans.

"If we continue to prove the safety and efficacy of this biologic joint replacement strategy, then we can get FDA approval for use of this technology for joint replacements in people," Cook said. "We are still in the early phases of this process, but this study gives a big boost to its feasibility."

COLUMBIA MISSOURIAN

MU funding for KOMU part of dispute with Mediacom

By Eve Edelheit

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COLUMBIA – The funding KOMU-TV receives from MU has taken center stage in the dispute between the station and cable company Mediacom.

Whether the funding is a lot seems to be a pivotal issue in ongoing contract negotiations between the two parties.

According to Mediacom, KOMU is supported by the University of Missouri, a nonprofit institution funded in part by state taxpayers. Thus, the company argues that it should not be compensated for programming as other local stations are.

According to the KOMU, it "operates like any other commercial station, earning revenue generated by commercial advertising sales, production and retransmission fees. It is a self-sufficient auxiliary enterprise of the University of Missouri."

So how much funding does the university channel to KOMU, which serves both as a NBC network affiliate and a teaching laboratory for broadcast journalism students?

Funding does help fund faculty salaries, and KOMU receives an amount for building maintenance, but the station generates revenue to cover operating expenses.

MU partially pays the salaries of four broadcast faculty working at KOMU, based on a ratio between teaching and production time. In 2010-2011, the amount provided by the university ranged from 19 percent to 89 percent — or \$14,194 to \$65,053.

"KOMU's newscast is a shared responsibility of the journalism school and the station management," said Kent Collins, chair of the broadcast journalism sequence.

KOMU also receives money for building maintenance and repair. In 2009, the amount was \$21,916.

According to the MU News Bureau, the university doesn't transfer any operating funds to KOMU to cover the daily expenses at the station, including staff and production costs.

KOMU generates operating funds largely through advertising sales and other sources of revenue. In fiscal year 2011, the station is expected to derive \$9.7 million in revenue.

KOMU returns 4 percent of its income in administrative fees to the university.

Meanwhile, negotiations continued Thursday without a resolution. KOMU has been off the cable lineup since 12:01 a.m. Tuesday.

On Saturday, NBC is carrying two NFL playoff games. Mediacom has planned a "Wildcard Watch Party" with refreshments at Harpo's Sports Bar for fans and cable customers.

NFL games after Saturday will be carried on CBS and Fox Sports networks.



Hospital room gets 'smart'

Features meant to improve care.

In the future, University Hospital patients can expect some new interactive features in their rooms that aim to improve the use of medical records and make their hospital stays a little more comfortable.

The Tiger Institute — the year-old partnership between MU Health Care and Cerner Corp. — yesterday rolled out a model of a proposed “smart room.” The single-patient room on the sixth floor of the hospital, across from the Sheldon School of Medicine Simulation Lab, is open to health care employees and students to show them features of a high-tech room.

Yesterday, administrators hosted an internal open house to show off some of those features.

The state-of-the-art room is designed to make delivery of health care more efficient and accurate while also centering on the patient experience, said Todd Churchill, senior director of Cerner.

Although the smart room concept is new, Cerner does work with two other clients to currently provide them, he said.

“We’re taking what’s already been proven to work and taking it to a whole new level” at University Hospital, said Churchill, who’s not related to School of Medicine Dean Bob Churchill.

Some key characteristics of a smart room include:

- A large medical record screen that automatically pulls up a patient’s chart when a certified provider walks into the room.

Nurses and doctors are expected to someday be equipped with devices that identify them when they enter a room, allowing them immediate access to records without having to manually log in, then shuts down when that provider leaves the room. The e-record provides current and historical medical information.

- Outside of patient rooms, electronic signage replaces the current paper method of alerting providers to a patient’s status. The electronic screen, for instance, shows signs indicating whether a patient is a fall risk, should not have solid foods or has certain allergies. The screen also indicates by name which health care provider is in the room.

Technology is available that would provide visitors with alerts when a patient shouldn't be disturbed, Churchill said.

- A handheld scanner lets nurses take vitals within seconds. University Hospital already is using electronic patient bracelets that let doctors and nurses ensure they're giving patients the correct medication and dosage.

- Rather than a flat-screen television, patients in the future can expect a flat-screen monitor that not only lets them watch TV but also lets them play games and surf the Web.

Through a small keyboard, patients can also keep track of their physical activities on the screen, watch educational videos related to their health problems and read biographical information about their team of doctors and nurses. From the comfort of their beds, patients can control the room temperatures and adjust the window blinds, too, through the monitor.

Those stations are expected to be in all University Hospital rooms by the end of this year, said Joanne Burne, chief information officer for the MU Health Care partnership with Cerner. It's likely, though, that the interactive features will be rolled out, meaning features might not all be available at first.

Some of the rooms at the new patient care tower being built next to University Hospital are expected to be smart rooms, although Burne said she couldn't yet speculate how technology might change between now and then. The simulation room lays a foundation of what's currently possible that can be built upon as new gadgets come into existence.

The model smart room -- which medical students will use to simulate real-world medical scenarios -- is a concrete example of what's emerging from Tiger Institute, spokeswoman Mary Jenkins said.

"It's tangible evidence of what we can do with health care through this partnership," she said.

Reach Janese Silvey at 573-815-1705 or e-mail jsilvey@columbiatribune.com.



Missouri legislative leaders outline priorities

JEFFERSON CITY — The new Republican legislative leaders charted a rightward course yesterday as they laid out their agenda on the opening day of the Missouri General Assembly.



Rob Mayer:
State Senate president pro tem

In the Senate, President Pro Tem Rob Mayer of Dexter promised he would push to make Missouri a right-to-work state, make it more difficult to sue employers over wrongful termination claims and make state government smaller.

On the House side, Speaker Steve Tilley of Perryville said he wants a moratorium on new regulations, fees and taxes; to require all driving tests to be conducted in English; and to drug test everyone on public assistance.

Mayer and Tilley are southeast Missouri Republicans from almost adjoining districts who are moving into the top leadership posts in the Senate and House. Because of term limits, both will hold those jobs for no more than two years. They enjoy the largest Republican majorities since the House was expanded to 163 members.

Republicans hold 106 seats in the House and 26 in the 34-member Senate.

Tilley said in his opening-day address and a later news conference that he intends to leave a mark on the House and the state. In the House, he said, he will roll back Republican rules that limited the power of the minority Democrats to control their committee assignments.

His legislative priorities were outlined in what he called the Show-Me Solutions Initiative, a five-point program he said will give the state limited government with low taxes while promoting individual freedom and responsibility.

Mayer laid out his priorities in a speech to the members and a news conference held before lawmakers began their session. Making Missouri a right-to-work state, he told his fellow senators, would open the state to employers who want to avoid unions.

The 22 right-to-work states have seen job growth in the past decade, while states such as Missouri that do not have the law have seen job declines, Mayer said.

In right-to-work states, an employee does not have to join a union or pay union dues to keep a job in a unionized workplace.

Right-to-work states, Mayer said during his news conference, have had more healthy economies and "better job creation than in forced-unionism states."

Both leaders said they wanted to protect education funding as much as possible from the expected \$500 million to \$700 million budget shortfall in the coming year.

"The No. 1 priority for state government is public education," Tilley said. "Education will be the last thing to cut."

To make sure the House is getting good budget information, Tilley said he would give subpoena power to the House Budget Committee to compel testimony from officials of Gov. Jay Nixon's administration.

Although he could not cite any instance where information had been withheld from the committee, Tilley said subpoena power "brings a level of seriousness" to the budget work.

During a news conference after Tilley's, House Democratic leader Mike Talbot of Kansas City said he would wait for details of most of Tilley's proposals before deciding whether to oppose them.

"We are going to hold the majority accountable if we don't agree with their ideas, and we are going to work to make good ideas better," Talbot said.

The House has had bipartisan cooperation on job creation initiatives, he noted, adding that he has had a generally good working relationship with Tilley.

Democrats will make job creation and education the top priorities for the caucus, Talbot said.

"Now is the time to take a look at every proposal," Talbot said. "Neither party has a monopoly on good ideas."

Reach Rudi Keller at 573-815-1709 or e-mail rkeller@columbiatribune.com.

COLUMBIA MISSOURIAN

UM Board of Curators to hold special meeting Friday

By Aimee Gutshall

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COLUMBIA – The University of Missouri Board of Curators will hold a special meeting 10 a.m. Friday, UM spokeswoman Jennifer Hollingshead said in a news release Thursday.

The board will close the meeting under sections 610.021(1), 610.021(3) and 610.021(13) of the Missouri Sunshine Law, according to the release.

The sections refer to legal matters involving confidential or privileged material, the hiring, firing, disciplining or promoting of employees and "individually identifiable personnel records, performance ratings or records pertaining to employees or applicants for employment," respectively.

A press conference will follow the meeting in the Clinton Club at Mizzou Arena.



ST. LOUIS POST-DISPATCH

Mo. farmers talk smart phones, computers

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Missouri farmers who rely on computers to run their business can now learn how to integrate smart phones into agriculture operations.

The University of Missouri's annual Computers on the Farm Conference will include sessions on cell phone technology suitable for agricultural businesses. The two-day conference begins Friday at Tan-Tar-A Resort in Osage Beach.

The event is geared for both beginning and experienced computer users. Discussion topics include farm financial software, digital media, social networking and computer mapping tools.

More information is available online at <http://agebb.missouri.edu/cotf>.



Non-English driver tests questioned

Tilley says issue is one of safety.

JEFFERSON CITY — One of the five planks of House Speaker Steve Tilley's Show Me Solutions Initiative priorities list is to end new driver testing in languages other than English.

In the section of his speech to the House calling for more accountability in government yesterday, Tilley said the state had the duty to require anyone wanting a Missouri driver's license to pass it in the state's official language.

During a news conference after the speech, Tilley said it was an important move to protect public safety. "How many times do you drive down the road and see the signs in other forms than English?" Tilley said. "I have been all around the state, and people think it is a common-sense issue and that we should institute it, and we are elected by the people to be their voice, and that is what we intend to do."

When asked whether it mattered if the person seeking the license was a legal resident or an exchange student who might not have a strong grasp of written English, Republican supporters who crowded in behind reporters and some members of the GOP caucus arrayed behind Tilley loudly protested the question. Tilley had to quiet them.

"If you are on the roads and you can't read the signs, it is a public safety issue, period," he said after restoring order.

The Missouri State Highway Patrol conducts written tests of would-be drivers in 12 languages, including English, said Capt. Tim Hull, director of the public education and information office. The languages include major European languages such as Spanish, French, Italian and German, as well as Chinese, Greek, Korean, Russian, Vietnamese, Japanese and Bosnian.

If a driver cannot pass the road test, they may hire, at their expense, an interpreter from a state-approved list, Hull said.

With road sign colors and symbols based on an international standard, Hull said, the patrol sees no safety issues for drivers who are not well-versed in English.

Safety "is the reason you want to make sure the driver understands the test they are taking," Hull said.

The University of Missouri provides international students with help obtaining driver's licenses, but English requirements for the university mean most can probably take the test in English, spokeswoman Mary Jo Banken said.

Rep. John Cauthorn, R-Mexico, said he likes the idea and thinks his constituents will, too.

"The average guy on the street hates Spanish, and it is everywhere," Cauthorn said. "To the average guy, that is important. We are almost to the point of losing our identity as a nation.

"If folks are going to come here and work, they need to work toward learning the English language," he said.

Reach Rudi Keller at 573-815-1709 or e-mail rkeller@columbiatribune.com.