

## Researcher accidentally carries radioactive material out of MU lab

Wednesday, November 4, 2009 | 8:53 p.m. CST



Kevin Fasken of the MU environmental health and safety department passes a Geiger counter over an area of contaminated dirt outside of Schlundt Annex on Wednesday. Geiger counters measure ionizing radiation and help the cleanup crew locate the pockets of radiation left from a phosphorus-32 spill last night. | [Jason Lenhart](#)

BY [Ben Wieder](#)

COLUMBIA – Portions of an MU building have been cordoned off after an MU researcher inadvertently spread radioactive material Monday evening by foot — literally.

MU spokesman Christian Basi said that a researcher in a lab on the first floor of Schlundt Annex accidentally spilled phosphorus-32, a radioactive isotope, which made it onto his shoes. He then walked in and out of the lab wearing the contaminated footwear.



*Kevin Fasken, left, holds a Geiger counter, an instrument used to measure ionized radiation, while Chris Pearman deposits contaminated dirt outside of Schlundt Annex on Wednesday. The MU environmental health and safety department was called to clean up a small amount of phosphorus-32 that was accidentally spilled last night.*

The researcher notified MU's environmental health and safety department as soon as he realized what had happened, Basi said, and the department responded "very, very quickly."

There were very few people in the building at the time, he said, and the department soon determined that the contamination posed no health risks to MU students, faculty and staff.

No classes have been canceled, and no students were involved, Basi said, but access to six labs near the site of contamination has been restricted.

The environmental health and safety department is surveying the affected area, which includes space outside Schlundt Annex, to find and remove or clean all affected materials.

The department will be conducting an investigation to determine exactly what happened, and disciplinary measures — if any — will be determined after the investigation.

Basi said that anyone working with radioactive material has to have been authorized and trained to do so.

Peter Ashbrook, director of environmental health and safety, said the department has "deployed a good hunk of our staff."

Department employees are using Geiger counters to find contaminated material and then either remove it or clean the area.

Ashbrook wasn't sure how long the process would take.

"These things can be tedious," he said.

Phosphorus-32 has a half-life of roughly 14 days, Ashbrook said, which is considered to be a short half-life.

The department will keep the removed material until it is no longer radioactive. While it typically keeps wastes containing phosphorus-32 for six months before disposing of it as nonradioactive waste, the small amounts present in this contaminated material might allow the department to dispose of it earlier, Ashbrook said.

The department will not begin its investigation into the accident until it has completed its decontamination work.

One MU professor who works in the basement of Schlundt Annex said he wasn't alarmed by news of the contamination.

"I don't feel any danger," said MU biochemistry professor Michael Henzl. "This is not Chernobyl."

Henzl suspended radioactive activity in his own lab several years before because of concerns for incidents such as Monday's spill.

"You've got to take the radiation safety seriously," Henzl said.

His research looks at calcium binding proteins, and he found that using calorimetry has been more effective for measuring activity than his previous use of the radioactive isotope calcium-45.

Phosphorus-32 is one of the most commonly used radioactive isotopes at MU campus, Basi said.

The potential risk of airborne exposure to phosphorus-32 is minimal, Henzl said.

"The amount of ionizing radiation from being out in the sun is greater," he said, but he added that if the material were ingested, it would be a serious problem.

Access to the area will remain restricted until the environmental health and safety department has determined that it is safe, Basi said. "We will keep it cordoned off until we are positive it's clean," he said.



# Mid-continental earthquakes could be long-after shocks

By Dan Vergano, USA TODAY

Mid-continent earthquakes along the Mississippi and elsewhere might just be long-lived aftershocks of big quakes, not fresh events, geophysicists suggest in a new study.

Through centuries, mid-continent faults have proven capable of unleashing horrible quakes, such as 2008's magnitude-7.9 earthquake in China, which killed at least 69,195 people. But the study, published in the journal *Nature*, suggests such quakes spawn aftershocks that linger for centuries. That differs from earthquakes on continental edge faults, such as California's San Andreas, which release aftershocks within days.

"Every large earthquake in the continental center comes as a surprise," **says study co-author Mian Liu of the University of Missouri-Columbia**. "We think we need to step back and reconsider the physics at these places."

In the 20th century, geophysicists demonstrated that continental crusts move over the Earth's surface over hundreds of millions of years, a phenomenon called continental drift. Where continents clash or collide with the ocean floor, earthquakes and volcanoes result. Mid-continental earthquakes, however, awaken more ancient, seemingly quiet faults left over from long-ended continental collisions.

In the study, Mian and Seth Stein of Northwestern University in Evanston, Ill., show that earthquakes in continental interiors, such as the Mississippi's New Madrid seismic zone hit by 1811 and 1812 major quakes, unleash aftershocks centuries to millennia later. Rather than pointing to risks of future major quakes on those spots as they would on the edge of a continent, these events are simply the slow settling of continental crust.

Mian says the risk of new major quakes "is probably lower than people suppose" along the New Madrid fault and around Charleston, S.C., hit by a major quake in 1886. U.S. Geological Survey maps show both areas as susceptible to major quakes, which affects building codes.

However, "suggesting these are just aftershocks and therefore (the New Madrid fault) is dead doesn't follow," says Susan Hough of the U.S. Geological Survey office in Pasadena, Calif. Other major quakes have hit the fault, which stretches from Indiana to Mississippi, around 1450 and 900, as well as perhaps as far back as 2000 B.C. "We have a seismic zone that produces earthquake clusters. The odds that it has shut off are pretty low."

In a commentary with the study, the USGS's Tom Parsons compares forecasting mid-continent quakes to "predicting a full year's weather based on watching one week in January."

## Small Earthquakes May Not Predict Larger Ones

Quakes far from tectonic plate boundaries may simply be aftershocks of ancient temblors

By Sid Perkins, *Science News*

Using the locations of moderate-sized quakes to estimate where "The Big One" will eventually strike may not work for all regions, a new study reveals.

Many researchers assume that small-scale seismic activity reveals where stress is building up in the Earth's crust—stress that can cause larger quakes in the future, says Mian **Liu, a geophysicist at the University of Missouri in Columbia**. However, Liu and Seth Stein of Northwestern University in Evanston, Ill., report in the Nov. 5 *Nature*, many moderate-sized temblors that occur far from the edges of tectonic plates could be merely the aftershocks of larger quakes that occurred along the same faults decades or even centuries ago.

Most large earthquakes occur along the edges of tectonic plates, where stress and strain accumulate as large masses of fractured crust jostle and scrape past each other. But major temblors can also strike fault zones in continental interiors thousands of kilometers from such interfaces. Such quakes are less frequent and therefore much less predictable. "Intercontinental quakes don't follow a single pattern," **Liu says**.

Stein and Liu analyzed earthquake data gathered worldwide. For major quakes that occurred where the sides of a fault moved past each other at average rates of more than 10 millimeters per year—as the two sides of many tectonic boundaries do—aftershocks died off after a decade or so. But for faults where the sides scraped past each other at just a few millimeters per year, aftershocks lasted about 100 years, the researchers reported. The longest series of aftershocks, some which have lasted several centuries, were triggered by quakes that occurred in continental interiors along slow-moving faults.

Continental quakes have this effect because their energy is stored longer. When major quakes occur, some of the energy that's released gets stored in the viscous material of the Earth's lower crust and upper mantle, **Liu says**. Later, that stored energy is often released in aftershocks. Along fast-moving tectonic interfaces, where stresses build quickly and seismic activity is much more frequent, the stored energy is readily released. But in continental interiors, typically far from plate edges, stress builds slowly and quakes are infrequent, so aftershocks can echo for centuries.

The Midwest's New Madrid Fault Zone is one such region, **Liu says**. Small- to moderate-sized temblors still occasionally rock this area, where four major quakes occurred between December 1811 and February 1812. But the recent quakes bear the hallmarks of aftershocks: For instance, they're happening along the same areas of the fault ruptured by the original shocks, and they're occurring less frequently as time progresses.

Identifying modern-day quakes as aftershocks "doesn't make life much easier," **Liu says**. Scientists may be able to better predict earthquakes using tools such as GPS equipment to

discern movements indicating that stresses are building up in the Earth's crust. Recent field studies suggest that stress isn't accumulating along the New Madrid Fault Zone, he notes.

"Aftershocks don't help you predict where the next big shock can occur," says Tom Parsons, a research geophysicist with the U.S. Geological Survey in Menlo Park, Calif. In midplate regions where repetitive cycles of earthquakes can take millennia to unfold, forecasting when and where the next big quake will occur is akin to predicting a full year's weather based on watching conditions during one week in January, he notes in a commentary in the same issue of *Nature*.

**CAMPUS CHATTER**  
JANESE HEAVIN



## Curator, lawmaker petitioned on behalf of applicants

By Janese Heavin

Posted November 4, 2009 at 7:45 a.m.

The University of Missouri admissions system appears to be more resistant to political pressure than its neighbor to the east.

That was the conclusion St. Louis Post-Dispatch reporter Kavita Kumar drew after reviewing admissions applications and outside influences from both MU and the University of Illinois.

Through a Sunshine Law request, Kumar did find two cases last year when a state lawmaker and a curator inquired about certain applicants. From the report:

Some MU graduate programs are more competitive to get into, such as its law school, which receives 900 to 1,000 applications annually. Last year, the school accepted about 400 students for 150 spots. And about 100 other applicants landed on the wait list.

One of them was a good friend of curator Doug Russell's sons. Russell, president of a manufacturing company in Lebanon, Mo., is one of nine appointed members of the university's governing board.

Russell e-mailed MU Chancellor Brady Deaton about this applicant in February. He followed up in April when the student ended up on the wait list. Russell told Deaton that the man had been accepted to the university's law school in Kansas City but that his first choice was MU. He asked Deaton to forward his comments to the law school.

"I have known (name deleted) all of his life," Russell wrote. "He has always been a very organized and disciplined young man, and I am confident he will put the effort required to be successful."

This set off a flurry of e-mails among Deaton, Dessem and an admissions official.

Dessem e-mailed Deaton confirming that Russell's letter of recommendation was added to the applicant's file and noting the number of students on the wait list.



"As you know, this is a particularly unpredictable year for admissions," Dessem wrote. "...Russell should know, though, that (name redacted) is being given every consideration in the admissions process."

Russell said in a recent phone interview that he was just acting on the student's request.

In another instance, Rep. Brian Yates, R-Lee's Summit, inquired on behalf of his cousin's wife. Kumar reported he sent an e-mail to Kenneth Dean, assistant MU provost, telling him the woman was committed to attending MU if accepted and asked whom he could speak to on the admissions committee on her behalf. He e-mailed Dean again in July when the woman landed on the waiting list. Yates told the Post-Dispatch he was not trying to use his position as a lawmaker to get the woman admitted, rather was recommending her as an alumni of MU.

You can read the Post-Dispatch report [here](#).

## MU's grade improves on sexual health report card

By Janese Heavin

The University of Missouri jumped 16 spots this year in a survey that evaluates the campus' focus on sexual health education.

The Trojan Sexual Health Report Card placed MU at 48th out of 141 colleges and universities, up from 64th place in 2008. MU ranked fifth in the Big 12. The study looks at, among other things, student opinions, condom availability, HIV testing and the existence of student peer groups. The University of South Carolina ranked No. 1.

Although it's nice to have an outside evaluation, Student Health Center educator Heather Eastman-Mueller said the survey is somewhat flawed because it lumps public and private universities from across the country into one category.

"There are different societal and cultural stigmas and mind-sets, and those are really important in how we address sexual health issues," she said. "Comparing MU to Florida State University — or Yale or Harvard — is just absurd."

Still, she said, the higher ranking this year shows MU is "headed in the right direction."

Eastman-Mueller, who specializes in sexual health education, touted changes such as the availability of free condoms at each residential hall and free HIV testing offered on campus. Additionally, a sexual health education course has been approved as a general education elective, giving students three credit hours toward their degrees. Eastman-Mueller teaches that course, which has 15 students this semester.

With posters in dorms, informational packets and constant reminders from the Student Health Center and Women's Health Center, it would be "impossible not to know" how to get information about sexual health, said Helena Kooi, an 18-year-old from Tucson, Ariz.

"Especially as a freshman, there are so many programs about all of the resources available," she said. "All the freshmen are really aware."

Sophomore Brett Rawlings agreed, saying he gets sexual health-related information through e-mail blasts that notify students of campus happenings.

More and more, the health center is taking advantage of technologies, such as e-mail and Facebook, that students use in daily life, Eastman-Mueller said.

"We're thinking outside the box in terms of how we can improve open, honest communication around sexual health," she said.

The health center is designing an interactive sexual health Web site, expected to be tested next semester. The site would allow students to use an avatar — a computer identity — to navigate decisions. For instance, the avatar would be able to see in a virtual setting the possible consequences of having risky sex. Whether the site becomes open to all students will depend on the success of the pilot test.

The health center also conducts its own surveys to see what students think about sex and health, and officials just completed the latest survey last week. Although she's still compiling results, Eastman-Mueller is pleased with what she's seeing so far.

"Our students seem to be quite healthy sexually, meaning they're in monogamous relationships and care about each other," she said. "I think that's positive."

Reach Janese Heavin at 573-815-1705 or e-mail [jheavin@columbiatribune.com](mailto:jheavin@columbiatribune.com).

This article was published on page A14 of the Wednesday, November 4, 2009 edition of The Columbia Daily Tribune. [Click here to Subscribe.](#)

## **Last review board member selected**

Wednesday, November 4, 2009

**University of Missouri learning resource specialist Mary Bixby** has been appointed to the ninth and final spot on the city's newly formed Citizen Police Review Board.

Bixby, a member of the city's Human Rights Commission, will serve a one-year term. The board is designed to evaluate complaints of mistreatment lodged by residents against police and evaluate overall police conduct in the community.

"I think of Columbia as a very progressive safe haven," said Bixby, a 30-year MU employee. "And I would like to see that it continues to be."

Bixby works at the learning center on campus, often helping coach students having difficulty making the transition from high school to college classrooms. She said she looks forward to serving on the newly formed board.

"I think there's always a need for people to look at what we are doing and why," Bixby said. "I believe people should be judged on content of their character, and I feel sure this board will look after that need."

# COLUMBIA MISSOURIAN

## Woman in wheelchair makes MU history during sorority recruitment

By [Hayley Besheer](#) November 5, 2009



MU freshman Gabriella Garbero leaves Hawthorn Residence Hall for 9:00 a.m. class on Sept. 18. ; [Daisuke Nakamura](#)

COLUMBIA — With 1,299 other women at MU, Gabriella Garbero went through sorority recruitment in August. When it was over, she accepted a bid from Kappa Kappa Gamma.

With her pledge class, Garbero attended a retreat at Stoney Creek Inn. She eats lunch at the sorority house and participates in chapter socials, philanthropy and meetings.

What sets Garbero apart is the way she gets around.

Born with Spinal Muscular Atrophy Type 2, her weakened muscles require the use of a wheelchair during the day and special medical equipment at night to support her body.

Garbero, 18, also made a bit of history at MU. Panhellenic officials at MU believe she is the first woman in the university's history to participate fully in rush while using a wheelchair.

To get inside MU's Greek houses during recruitment, she brought a friend to set up ramps across any stairs she encountered. The friend also handled other accessibility needs but didn't accompany Garbero into any of the houses.

Lindsey Hoffman, vice president of public relations for MU's Panhellenic Council, said Garbero's decision to go through recruitment caused little stir on campus.

"Gabriella contacted us to say she'd be coming through," Hoffman said. "We made a few accommodations to make things easy for her, but she essentially took care of everything."

The limited access for wheelchairs in the chapter houses didn't slow Garbero down.

"I don't think it's right to be accusing," she said. "I know that handicap accessibility has not been on the forefront of people's minds because, until now, it hasn't been needed for any of the members."

### **Optional ADA compliance**

Although the law's purpose is to protect the rights of those with disabilities, Greek houses are considered off-campus, private property and thus do not have to comply with the provisions in the Americans With Disabilities Act.

Furthermore, Title III of the ADA excludes any entity that could be defined as a private club. Greek houses meet two of the requirements for private club status: Sororities and fraternities are highly selective in choosing their members, and the organizations have historically been private.

"Any responsibility for accessibility would belong to the property owners," said Lee Henson, who coordinates MU's compliance with the Americans With Disabilities Act.

If an area is deemed public accommodation, its owner, lessee or operator must make the location accessible. Although Greek houses could arguably be considered places of public accommodation, Title III of the ADA makes at least two references that appear to exempt fraternities and sororities.

Sorority and fraternity houses are neither owned nor operated by the university, so university rules don't apply to Greektown zoning or building. If the university were to own or operate a Greek chapter house, it would be regarded as an educational facility and therefore need to comply with ADA regulations.

Although the Office of Greek Life exercises influence over fraternity and sorority practices, helps to facilitate recruitment and provides housing for a significant number of students, it has not been designated as an MU program.

## **Fitting into a community**

Still, Garbero's sorority is doing whatever possible to accommodate her. She keeps two sets of ramps inside the sorority house to make entries and exits easier. One ramp leads into the house and the other provides access to the dining room.

Recently she met with the Kappa Kappa Gamma house board, which promised to replace her temporary ramps with permanent ones. Sorority members also said they are looking for additional opportunities to help.

"We will work with Panhellenic, our headquarters and anyone we can to discuss arrangements for Gabriella," chapter President Adrienne Pedersen said.

Garbero said she finds it odd that others who use wheelchairs haven't rushed before. Thousands of students with disabilities have attended the university over the years, and Barbara Hammer, the director of disability services at MU, said 511 students registered with the Office of Disability Services this semester.

Garbero's best friend and roommate, Kristen Montgomery, who also needs a wheelchair, said she might be the next to rush recruitment now that the trail has been blazed.

Garbero will not, however, be able to move into the sorority house. The house, like many older residences, has accessibility issues, and she needs personal aides to assist her throughout the day.

No matter where she lives, Garbero has found a community of friends at a large university much the way she did on a smaller scale in high school in St. Louis.

"One day I just got this feeling that this is what I was supposed to do," she said.

Yet, in the back of her mind, Garbero said she wasn't sure she'd get a bid.

"People said I'd be allowed to participate," she said, "but no one promised I'd get accepted in the end."

## **Getting support, getting involved**

Garbero credits her decision to join a sorority to her family, saying, "I was blessed to be raised in a family where I wasn't limited just from being in a wheelchair."

She said she isn't used to feeling so included by a group of people. "I really feel like they're my sisters," she said. "When you're handicapped, you feel so isolated. Instead of being bummed that I'm stuck at the bottom of the stairs, it's OK because my sisters make me feel comfortable. They've asked, 'How can we help?'"

Pedersen said the women in Kappa Kappa Gamma were thrilled about Garbero pledging the sorority.

"We're just so excited she took that opportunity," she said. "She has a lot of people supporting her. We wanted to make her experience at our house as normal as possible. We treated her just like any other girl going through."

Pedersen accounts for the chapter's response as mutual respect, saying: "Gabriella will teach all of us a lot. The great thing is she wants to get involved."

Currently, Garbero said she is just enjoying being a college freshman and becoming a part of the Greek community.

"I'm trying to take it all in day by day," she said. "Right now I'm just trying to observe everything that's going on."

"I can start small with skits, and as for the future maybe I'll become an officer in the sorority or something of great importance."