Dinosaurs Loom Larger After a Study of Limbs

By SINDYA N. BHANOO

As if dinosaurs, some of them anyway, weren’t big enough, a new study reports that the skeletons we see in museums should be as much as a foot taller than they are now. Dinosaurs, paleontologists write in the journal PLoS One, had thick pieces of cartilage between their joints that increased their height.

In conducting the study, the researchers looked at two close modern relatives of dinosaurs, the ostrich and the alligator. They measured limb lengths of the animals, and then skeletonized the limbs, removing the weight of cartilage and soft tissue.

In both cases, cartilage accounted for about 6 percent to 10 percent of the creatures’ limb lengths.

The scientists then used this information to estimate cartilage thickness in various dinosaurs.

Cartilage may not have significantly increased the height of theropod dinosaurs, like Tyrannosaurus, because they moved about in a hunched position, said Casey Holliday, a paleontologist at the University of Missouri and the study’s lead author.

But ornithischian and sauropod dinosaurs, like Triceratops and Brachiosaurus had a more upright posture and may have been taller than previously estimated. Brachiosaurus, thought to be about 42 feet tall, may have been at least a foot taller, the study found.

“The cartilage caps and other soft tissues were all lost,” Dr. Holliday said. “The fact that we’re seeing this giant cartilage may mean that more paleontologists will try to address soft tissue.”

In humans, bones have protrusions called condyles that help form joints. A minimal amount of cartilage is needed. Since dinosaur bone specimens generally have rounded ends, thick cartilage caps may have acted as condyles.

Understanding dinosaur cartilage may help scientists learn more about how fast dinosaurs walked or ran, Dr. Holliday said.
Missouri Campuses Are Asked to Account for 'Low-Producing' Degree Programs

The Missouri Department of Higher Education has given the state’s public colleges and universities an October 21 deadline to explain what they will do with certain “low-producing” degree programs, according to today’s Columbia Missourian. The state has compiled a list of programs that produce few graduates, using thresholds of 10 graduates or fewer per year for bachelor’s programs, five graduates for master’s-level programs, and three graduates for doctoral programs. Campuses are supposed to declare by October 21 whether they will eliminate, merge, or defend the existence of the programs. The state hopes to develop a final list of proposed mergers and terminations by December 2. At the University of Missouri’s flagship campus, the state has tagged 75 programs as “low producers.” Several of those are Ph.D. programs that were included in the National Research Council’s new assessments and rankings of American doctoral education. It will be interesting to see whether data from the NRC report are wielded to either attack or defend the at-risk programs.
Less popular MU programs under scrutiny

By JANISE SILVEY

University of Missouri administrators are taking a look at academic programs that only graduate a handful of students every year. But that doesn’t mean those programs are on a chopping block.

The Missouri Department of Higher Education has instructed public two- and four-year colleges to review “low-producing” degree programs — undergraduate academic units that graduate, on average, fewer than 10 students a year, master’s programs that graduate fewer than five students and doctoral programs that graduate fewer than three students.

The exercise aims to highlight where universities could be more efficient, said Paul Wagner, deputy commissioner of higher education. But he also stressed that the state does not have the authority to make a university eliminate a program. At MU, that power rests with the UM System Board of Curators.

“The institution will be asked to provide their commentary or rationale for whatever they recommend happen to a program, if it should be continued for some reason or discontinued for some reason,” Wagner said. “But the ultimate decision of whether or not to end a program or to scale it back rests with the institution’s governing board.”

That doesn’t mean MU administrators aren't taking the exercise seriously. Last week, Provost Brian Foster called on deans and department chairs to start talking about these so-called low producing degree programs, and a flurry of e-mails from deans, chairs and faculty members were circulating today with questions about the state’s charge.

Although the state is expecting universities to submit details of low-performing programs by Oct. 21, the discussion is still early, Foster told the Tribune.

“There are all kinds of ways this could turn out for any given program,” he said.

Foster released a list of about 75 programs — mostly graduate-level — that graduate fewer students than the Missouri Department of Higher Education criteria. In many cases, these programs have a place on campus and in Missouri’s higher education landscape, regardless of the number of graduates.

For instance, few students earn degrees in foreign studies or languages, but that doesn’t mean the discipline isn’t critical, Foster said.

“One of the big problems the U.S. faces today is we don’t do enough of that,” he said. “We live in this monolingual culture, and we’re not well prepared to be effective in a global business world or a global political world. We have to get better at those things. So the broader question about international studies — my god, we’re in a world if we don’t become functional in a global environment, we’re going to sink.”
In other cases, MU might be the only public institution in Missouri where students can earn a specific degree. That's the case with most doctoral programs.

Administrators already are coming up with ways to defend their low-producing programs. Michael O'Brien, dean of the College of Arts and Sciences, sent an e-mail to his chairs outlining arguments for keeping those programs.

"We as a college are going to make the case that as an" Association of American Universities "college of arts and science, we are bound to produce high-quality programs, and that given the size of the faculty we have (read small), we're doing a great job of it," O'Brien wrote. "In fact, the argument will go something like this: 'Give us 30 percent more faculty, and we can handle 30 percent more graduate students, which will push us above the 'magic' numbers arrived at by the" Coordinating Board for Higher Education. "In essence, what we've done is to curtail graduate enrollments because we don't have the money and faculty to support them."

Although cases can be made for keeping small programs, Foster said, he expects MU to make some curriculum or degree changes based on the discussion.

"We're under all kinds of fiscal pressure these days," he said. "Business as usual isn't really an option."

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COLUMBIA MISSOURIAN

UPDATE: MU must evaluate 75 'low-producing' degree programs

By Walker Moskop
October 4, 2010 | 12:48 p.m. CDT

All Missouri's public institutions of higher education must evaluate curriculum on tight deadline

COLUMBIA — MU has until Oct. 21 to evaluate programs deemed to be "low-producing" and to tell the Missouri Department of Higher Education whether they will be terminated or why they should be retained.

MU Provost Brian Foster sent MU deans an e-mail on Friday informing them that “under-producing degree programs” are being evaluated. The mandate, handed down by the Coordinating Board for Higher Education, stems from Gov. Jay Nixon's call in August for a comprehensive review of higher education in the state.

"It will be necessary for deans, chairs, and others to talk with each other, to consider merging programs, to find common components that can show reduced costs and to otherwise address the low productivity issue," Foster said in the Friday e-mail. "In appropriate cases, you may wish to consider collaboration with other institutions in Missouri to continue the program."

"It is hard to imagine a scenario in which we would not eliminate some programs at MU," Foster wrote.

Foster attached to his e-mail a list of 75 programs deemed to be low-producing; 63 of them are graduate programs. Several foreign language programs and an array of science degree programs are under review.

The e-mail also included a draft copy of the response form used for the program productivity review. Foster said a preliminary response from deans is required by Oct. 15.

In a telephone interview, Foster said, "(the programs) are not being asked to justify their existence." But he acknowledged that changes, including potential "realignments and eliminations," probably would occur.

David Russell, interim commissioner of higher education, said in a letter to MU Chancellor Brady Deaton that chief academic officers at Missouri campuses will have to provide the coordinating board the "proposed actions they will take concerning low performing and duplicate programs" by Oct. 21.
Meanwhile, Russell said that the higher education department will give all institutions a separate analysis and findings today concerning program productivity and duplication statewide.

Between Oct. 21 and Nov. 30, the department will draft a report with recommended action and submit it to the coordinating board on Dec. 2. A final report will be given to Nixon and the board in February.

The list of programs sent to the deans included statistics on the numbers of students graduating from each program over each of the past six years. Russell said in a news release on Friday that programs that fail to meet the board's productivity criteria of producing 10 graduates per year (calculated over a three-year average) at the bachelor's level, five majors per year at the master's level and three majors per year at the doctorate level will be subject to further study.

Foster said evaluating programs using only that statistic would be a "simplistic approach."

"We look at a wide range of things," he said. "But we have to have a discussion about this data because there's a lot of interest around it."

"It's important to understand this is just one piece of input regarding whether a program is productive," Foster added.

Leona Rubin, chairwoman of the MU Faculty Council, said in an e-mail to the council at noon on Monday that the list Foster distributed is a short one.

"Campus has developed a short list of low performing programs based solely on the number of graduates (as mandated by CBHE)," she wrote. "Campus administration recognizes that this is not the only or best predictor of a programs (sic) value. ... There will be a longer list released in a day or two. There are other lists that will not be very well received and you should be aware that the media has all these lists."

Rubin said Deaton will meet with MU faculty to discuss the matter on Wednesday.

Foster said there are a variety of ways that a program can be productive. He cited community involvement, grants received, faculty being published and awards received as important factors.

Kathy Love, spokeswoman for the Department of Higher Education, said it continues to review and discuss the criteria for determining which programs are low-producing or low-performing. It has not set a deadline for finishing that work. She added that the department agreed to accept input from community colleges.

Foster said there hasn't been a discussion regarding how much MU is aiming to save with potential program cuts and mergers.

"We haven't got a dollar amount," he said.
Foster said MU won’t know how much money needs to be cut until the state budget is passed in the spring. This will depend on a variety of factors, he said, including student enrollment, state appropriations and whether there is a tuition increase.

“We have to look at the total budget, the total financial plan,” he said.

Efforts to reach deans and department chairs at MU were largely unsuccessful Monday. Lee Lyman, chair of the Department of Anthropology in the College of Arts and Sciences, said faculty in that college plan to meet on Tuesday to talk about the program review. Both the master’s and doctoral programs in anthropology are included in the preliminary "low-producing" list distributed by MU.
Defining the fundamental elements of the Missouri coordinating board's review mandate

By Matthew Dixon
October 4, 2010 | 5:25 p.m. CDT

Questions and answers about the coordinating board and its review mandate

COLUMBIA — As reports of a comprehensive, statewide review of higher education programs surface, some basic questions arise that demand some answers.

What is an academic program?

MU defines academic programs as "the academic organization to which a student applies, is admitted, and ultimately graduates. These will, in most cases, correspond to schools and colleges." Examples would include journalism, agricultural economics, education policy, pharmocology and exercise physiology.

How many total academic programs does MU have?

MU has 96 undergraduate and 199 graduate programs.

What is the Coordinating Board for Higher Education?

Members of the coordinating board, which was authorized in 1972 by an amendment to the Missouri Constitution, are appointed by the governor and confirmed by the state Senate. The board's responsibilities include designing and establishing a unified budget and coordinated plan for higher education for the state.

Who is on the board?

- Lowell Kruse, chairman
- Mary Beth Luna-Wolf, vice chairwoman
- Doris Carter, secretary
- Jeanne Patterson
- Betty Sims
- Kathryn Swan
- Craig Van Matre
The board names the commissioner of higher education. The interim commissioner is David Russell.

**What is the coordinating board's power?**

Section 173.030(2) of the Missouri statutes gives the board responsibility for recommending to governing boards of any institutions in the state the development, consolidation or elimination of programs, physical facilities or policy changes where that action is deemed in the best interests of the institution and/or the general requirements of the state.

**What are the criteria being used to determine whether an academic program is "low-producing"?**

Those criteria are still being developed, higher education department spokeswoman Kathy Love said. But preliminary lists were based solely on numbers of graduating students over the past six years. Programs for that list were considered low producers if they failed to produce a three-year average of 10 graduates per year at the baccalaureate level, five majors per year at the master's degree level and three majors per year at the doctoral degree level.

**What are MU's options?**

MU, at this point, is charged with indicating which of five options it will choose for each of the programs deemed to be low producers. It must declare one of the following five:

- That the program has or will be voluntarily terminated.
- That the statistics are incorrect in the data provided and program does actually meet criteria for productivity.
- That the program is new, having been approved within the past three years, and is exempt.
- That the program is critical to the institution's mission and will be retained.
- That the program contains courses that support other programs offered by the institution.

MU and other institutions also have a sixth option called "other," in which they can indicate their plans to increase completion rates, argue that the program produces sufficient revenue, describe its potential as a collaborative program, call for a more detailed program review, put the program on inactive status or advocate for retention because master's and doctoral programs are in the same discipline.
COLUMBIA MISSOURIAN

Collaboration could be key to keeping underachieving programs in Missouri universities

By Jessica Stephens
October 4, 2010 | 10:21 p.m. CDT

COLUMBIA — Missouri's public universities have until Oct. 21 to give the state's department of higher education their plans for the future of degree programs with low numbers of graduates.

Public universities have received a preliminary list of degree programs the Coordinating Board for Higher Education considers "low-producing." The department defines these as fewer than 10 graduates per year for bachelor's programs; five per year for master's programs; and three per year for Ph.D. programs, when averaged over the past three years.

The universities are waiting on a final list of degree programs that the board wants them to reconsider.

Some universities, such as Truman State University, are waiting on the final list of programs before deciding how they'll move forward, Truman's Provost Richard Coughlin said.

Southeast Missouri State University Provost Ronald Rosati said the university evaluates all programs at least once every three years. The system looks at the number of students who graduate from a given program, the cost of the program and work force trends to determine if a program with a low number of graduates is worth maintaining.

University of Missouri-St. Louis Provost Glen Hahn Cope said there are many things to consider when evaluating a low-producing program. A relatively new program might not have been around long enough to reach its potential, she said. She added that some course requirements overlap heavily with those of another degree program, which might have little cost to a university.

MU has 75 degree programs under review.

Sometimes a program isn't graduating many students because shifting trends have made it less relevant. Rosati said Southeast Missouri State suspended the Management Information Systems program in 2009 after changing technology threatened the value of the degree. The program had a 75 percent enrollment drop the five years prior.
"(Students) vote with their feet," Rosati said. "If society changes, then we have to stay up with those changes."

Some low-producing programs are in academic areas that university administrations are reluctant to do away with, such as economics and engineering. In these cases, some Missouri universities are choosing to collaborate. Rosati said Southeast Missouri State has discussed combining classes with Northwest Missouri State University, Central Missouri State University and Missouri State University using technology, such as online classes, webinars and real-time interactive video.

Collaboration introduces new challenges to participating universities, which must determine details such as who will get to teach the class and how tuition money will be divided, said John Catau, associate provost for undergraduate education at Missouri State.

Douglas Dunham, provost of Northwest Missouri State, said some students have expressed concern that their programs will be terminated, but some professors see the requirement as an opportunity to evaluate academic priorities and reallocate resources to better serve students.

"It's part of a process to make sure we're good stewards of our resources," Dunham said.
Editorial: MU, state should be careful in cutting academic programs

Published Oct. 5, 2010

In an attempt to make higher education spending more efficient, the Missouri Department of Higher Education is examining public university programs with low graduation rates to see if they should be eliminated in the next round of state budget cuts.

In an article in our Sept. 28 issue, the DHE said it will not make recommendations about which programs to eliminate before December, but we are concerned now.

Cutting programs doesn’t exactly add up in the equation of improving education. We’re not being overly idealistic, nor are we ill-informed on this topic—it’s well known the state finances are in bad shape. But in difficult economic times, it’s important to remember that smaller programs still hold a significant amount of weight in creating intellectual diversity within our community.

According to its website, the Missouri School of Journalism doctoral program only accepts 7 to 10 students per year. Considering the rigorous nature of doctoral programs, if only three people graduated this year, would that program be up for consideration?

What if a program doesn’t meet the requirements, but the few studying the subject are doing significant work for the field? Evaluating the importance of a program through numbers rather than the quality doesn’t seem fair to students or the academic field in question.

Ideally, we would want to keep every program to allow students the best options and opportunities. This may not be possible, but we think newer academic programs should be spared from cuts. Newer major programs are likely to need more time to gain their footing in the university to get the graduation numbers the department needs.

We also think there should be a disclaimer to future applicants and prospective students in endangered programs warning them that the department they may be applying for might not exist once they actually enroll at MU.

Finally, we want to reiterate the importance of analyzing and giving the list of cuts a second look to make sure there is absolutely no way to keep the program funded.
For all public universities in Missouri, but especially MU, variety in education is important in student diversity. Students who desire specialization in a major not offered through public institutions will go elsewhere, but the reality is many Missouri residents don’t have the option of leaving the state or going to a private school.

Limiting the students in higher education does nothing for the state or the students and could potentially cause further funding problems in the future. Although the eliminations could devalue an education for an in-state student, it also becomes more likely that out-of-state students would decline due to lack of incentive -- a blow to both funding and student diversity.

We know these decisions are difficult for the university and the state, but we want to encourage their best and full considerations before ending any MU program.
The University of Missouri System is trying to find ways to tighten business operations in hopes of freeing up funds and employees’ time.

Consultants from Accenture/Hackett are working with administrators to identify areas where work could be streamlined. The consulting team is being paid $400,000 — money that’s coming from reserves — and is expected to finalize a report this fall.

The savings will more than cover the costs, said UM Vice President of Information Technology Gary Allen, who also noted the system is trying to find external donors to offset that expense.

Ultimately, implementing shared services across the system could shed some $10 million off the roughly $100 million spent on transactions annually, UM System President Gary Forsee said last month.

The goal is to create more efficient ways to handle the thousands of transactions university employees deal with, namely in the areas of human resources, finance, procurement and information technology, Allen said.

Although the cost of one transaction might be minimal, it adds up. Last year alone, university employees processed 627,570 paychecks, 99,656 purchase orders and 53,195 travel vouchers, said Paul Toler, director of business services.

Take travel vouchers as an example, Toler said. Right now, a faculty member who needs to be reimbursed for trip expenses submits that request on paper to a staff member who then enters the data into the computer. The request then goes through layers of approval, requiring other employees to stop what they’re doing to handle that transaction.

Under a more streamlined process, the faculty member would instead enter the travel report electronically and send it himself, reducing the number of staff members who have to handle it. That should allow employees to spend time on more important duties, Toler said.

“When they spend less time” on transactions, “they have more time to support faculty and students, things critical to the mission of the university,” he said.
University employees, for the most part, are on board with the shared-services concept, said Amy Lana, chairwoman of the Intercampus Staff Advisory Council, the group that represents staff members at all four campuses.

“Staff was a little concerned at the beginning because no one understood how shared services differed from centralization,” she said. “But they are two different concepts, so once staff started hearing more about how shared services works, we understood our jobs aren’t in danger.”

If anything, employees see the benefit of not having to take time from their own jobs to occasionally handle a transaction, said Lana, an information specialist at MU Libraries.

“You can spend an hour on a task that normally should take 10 minutes to do because you haven’t done it in so long,” she said. “It really is about taking these processes that you might do in your job once a month and allowing someone else to do it.” Under a shared-services model, “one person spending one-eighth of their time doing one little thing could spend time doing strategic planning instead or working on career advancement or focusing more in-depth on tasks that require more attention.”

Reach Janese Silvey at 573-815-1705 or e-mail jsilvey@columbiatribune.com.
Allowing people to teach in Missouri schools without an education degree is not a new or untested idea. For 32 years I taught in a suburban St. Louis school district without an education degree but with a Missouri teaching certificate. In the 1960s the University of Missouri allowed students enrolled in the College of Arts and Sciences to take enough hours (I believe it was 15) in the College of Education and to complete student teaching in order to receive both an Arts and Science degree and a teaching certificate. Many of us took advantage of this opportunity and spent our entire careers in education.

This dual-enrollment was an amazing program for producing secondary teachers with more subject matter knowledge than their peers in the College of Education. As an English major, I needed 40 hours of English classes to receive my BA; students who received Education degrees only had to take 20 hours in their majors. Knowledge of subject matter is key to good teaching.

I do not know why the University ended this program, but I have always been thankful that I had a chance to take advantage of it. As a high school department chair, I interviewed many teacher candidates woefully lacking in their knowledge of English literature and writing, but having Education degrees.

Patricia Noland

Ballwin
COLUMBIA MISSOURIAN

South African university hopes to join with MU on student leadership exchange

By Han Cheung
October 4, 2010 | 11:24 p.m. CDT

COLUMBIA — Khaya Magopeni, a former student leader in South Africa, talked about the importance of student involvement at a presentation on Monday at MU.

Magopeni, who attended The University of the Western Cape in South Africa, said he has witnessed a decline in student leadership in higher education in his country and that student organizations played an important role in resisting the apartheid, which lasted from 1948 to 1994.

“The priorities are different now,” said Magopeni, who attended the university in the late 1990s. “But the focus is not to the extent that you wish there were.”

The event was co-sponsored by the MU International Center, MU Graduate School and MU Office of Student Affairs.

Now the executive assistant to the deputy vice chancellor at his alma mater, Magopeni also discussed the possibility of a student leader exchange program between his school and MU as an extension to the South African Education Program. The program is a 24-year partnership between MU and the University of the Western Cape.

Launched in 1986 as an initiative to offer educational assistance to South Africans that were disadvantaged by the apartheid, the partnership was the first of its kind established between a U.S. university and a historically black South African university, according to the program’s website.

James Scott, director of the International Center, said since the South African university was located in a racially-mixed community, there was resistance to the program when it first started.

“It took a lot of personal will,” he said.

The program continued after the end of the apartheid in 1994, and exchanges between the two universities still happen every year.

Magopeni said he hopes to expand the exchanges to include one for student leaders.
"We’ve been talking about that recently," he said. "It’s been mainly an academic project from its inception."

Kristofferson Culmer, president of the MU Graduate Professional Council, said he would be participating in a preliminary meeting on Tuesday to discuss it with Magopeni.

If there were an exchange, Ben Hansen, director of the Missouri Student Association's Department of Student Activities, said he would like to visit and compare the universities' efficiency in student leadership.

"We have a large system here and sometime it gets bogged down," he said.

Scott is not sure when there will be enough funding for the student leader exchange to be launched, but hopes it will happen soon.

“Our student leaders will be able to engage in bigger issues and look beyond the campus,” he said.

Magopeni, who returns to Africa on Wednesday after a month-long stay in the U.S., stressed the importance of student leaders as agents of change.

“They have the right and duty to ask what could and should be done to change society, and act on the answers,” he said.
MU to invest $5 million in entrepreneurial programs

The Enterprise Investment Program aims to help start-up companies develop and commercialize intellectual property at MU.

By Joyu Wang

Published Oct. 5, 2010

The UM system announced its plans to invest up to $5 million to help accelerate commercialization of the university’s intellectual property through the Enterprise Investment Program on Oct. 1.

According to the Enterprise Investment Program website, the program was created to help Missouri startups and early stage companies working to commercialize intellectual property developed at the university. The program’s purpose is to help in the commercialization effort of university-developed intellectual property, in order to create jobs and generate lasting economic benefits to Missouri.

Scott Uhlmann, Office of Intellectual Property administration director, said the Enterprise Investment Program was first announced by UM system President Gary Forsee earlier this year and the program began accepting applications Oct. 1.

On the Enterprise Investment Program’s website, Forsee said a program such as the Enterprise Investment Program will help to combine the best minds in the UM system with entrepreneurs at start-up companies across the state, creating cutting edge, quality jobs for Missourians.

Uhlmann said the program will invest up to $5 million from funds set aside by the president for Strategic Priorities. The maximum amount of investment in any one company is $500,000.

“By providing entrepreneurs and early stage companies with an infusion of financial resources, we can greatly enhance the potential of moving innovations into the marketplace in a timely manner and positively impact Missouri’s economy through enhanced tax revenue and new job creation,” Michael Nichols, vice president of Research and Economic Development said in a news release.

Nichols said universities today bring about 70 percent of research to the market, and private industry brings about 30 percent. This is a complete reversal from the mid 1970s when industries conducted the majority of research that led to new product commercialization.
Uhlmann said the Enterprise Investment Program is looking for applicants who have a relationship with the university, such as a license of university-owned intellectual property.

“Faculty members who want to create a company and license intellectual property from the university may also apply to the program,” Uhlmann said. “Even students, who after a recent change to the university’s policy now own their intellectual property, may apply to the program.”

According to the news release, the university will give preference to companies in high-tech industries with a strong potential for job growth, such as life sciences, nanoscience, information technology, engineering, energy, medicine and medical devices.

The criteria of evaluating the applications include whether the applicants would accomplish the goals set forth in the application, create Missouri jobs, move the university developed intellectual property closer to market and provide the university with a return on the university’s financial investment, according to the program’s website.

Applications are being accepted from Oct. 1 through Dec. 31. Applicants can expect an initial decision to be made within three months.