Sculpting solar systems: Magnetic fields seen for first time

By Liz Ahlberg

Physical Sciences Editor

A
stronomers have caught a glimpse of the invisible magnetic fields that sculpt solar systems. Looking at a bright, nearby baby star and the dust swirling in its cradle, astronomers from the U. of I. and collaborating institutions were able to make out the shape of the magnetic field surrounding the star. The finding, which is a new way of looking at star and planet formation, were published in the journal Nature.

“Magnetic fields travel through these open areas of space with these big clouds of gas and dust; those are the cradles of baby stars,” said Joel Steinfeldt. “The disk of dust and debris around the baby star is where planets are going to form, where the seeds of a solar system are sown. There are some theories about how that works, and a lot of them involve magnetic fields,” said Steinfeldt. “Now we have the first glimpse of a magnetic field in a disk before, so that was an essential missing piece of information.”

The astronomers focused on a very bright, newborn star named HL Tau. Located a mere 450 light-years away—an, a short distance on astronomical scales. They used a telescope in California that the U. of I. operates in part, called the Combined Array for Research in Millimeter-wave Astronomy (CARMA). CARMA allowed the researchers to look at the dust around HL Tau at two different angles, like looking through polarized sunglasses. Dust in space is an oblong shape and aligns itself with the magnetic field, so the astronomers were able to tell the shape of the field by the tiny differences in how the dust filtered the light from the star.

They found that the magnetic field plays a role in shaping baby star systems. Furthermore, the shape they saw was somewhat surprising—a toroid, or twisted-donut shape, rather than shooting out vertically from the poles of the star as had been widely theorized. “Now we can actually say there is a morphology, and it’s consistent with twisted toroidal fields. That means on these size scales where planet formation is happening, the field is important,” said Stephens. “It’s a different way of looking at star cradles, and a way if we can be able to do in the past. You’re able to get extra information you’ve never had before, reveal morphology and maybe look for differences that tell you more about the structure than you would with just looking at one dimension.”

The next step for Looney and his collaborators is to measure the magnetic field in other nearby stars, using a larger telescope with greater sensitivity. They also intend to work more closely with theoretical models that shape the magnetic fields and to integrate magnetic field parameters into existing star and planet formation models.

“Our models have used gas information and kinematics but the magnetic fields were missing all that time, and that puts huge constraints on all the models,” Loo- ney said. “We need to connect the motion of the system with how that changes the magnetic fields, and see if we can be accurate to those models. Then from that, we can begin to understand the prop- erties of the forming solar system. Magnetic fields are really an un- tapped way to probe a star disk.”

The National Science Foundation supported this work.

Revised policy addresses rules on campus endorsements

By Mike Helenthal

Assistant Editor

The rules defining whether a U. of I. employee can or cannot endorse an outside vendor’s product or service just became clearer, as a result of a revised policy statement in the Campus Administrative Manual (CAM). The policy restricts employees from sup- plying a testimonial for an outside vendor in the university’s name, except in certain cases when there is a benefit to the university and prior permission is obtained from the associate chancelor for public affairs.

“We get these requests all of the time,” said Joel Steinfeldt, the brand manager for campus Public Affairs. “As a general rule, we don’t want people appearing in advertis- ing and giving the impression they are rep- resenting the university.”

The policy statement, developed by the Office of Business and Financial Services and the campus legal department, was put in place to protect the university’s reputa- tion and shield it from legal exposure, as well as to ensure all messages align with established communication strategies.

“When someone asks whether some- thing is allowable, what I ask is, ‘What ben- efit is there to the university?’” Steinfeldt said. “The whole idea behind this is to pro- tect the university’s reputation, and to do that, we have to remain impartial.”

The policy prohibits endorsers from be- ing compensated and, in addition to requir- ing demonstrable benefit to the university, limits what an employee with prior approv- al can say on behalf of a vendor.

The prior-approval process involves an examination of the text, images and context of the project to ensure that it contains no qualitative endorsements or inaccurate or misleading references to the university.

The endorsement can include statements of fact but not value statements. An employ- ee can confirm the university’s use of the product or service but, even when approved to participate, an employee can’t say “it’s really swell and I use it every day.”

Steinfeldt said an example of an ac- ceptable endorsement scenario would be providing students a link to the sustain- able farm where some of the cafeteria’s food is supplied. Doing so provides impor- tant information but doesn’t make a value Site ENDORSEMENTS, Page 5

Mabokela named vice provost for international affairs

By Mike Helenthal

Assistant Editor

Reitumetse Obakeng Mabokela has been named the vice provost for international affairs at the University of Illinois, pending approval at the Nov. 13 Board of Trustee meeting.

Mabokela is the assistant dean for interna- tional studies in education at Michigan State University and co-director of its Glob- al Center for Food Systems Innovation. She has worked on a host of projects addressing global food and education issues.

She earned her master’s degree in labor and industrial relations in 1994 and a doctor- ate in educational policy studies in 1998 – both from the University of Illinois at Urbana-Champaign.

She started teaching at MSU as a visit- ing professor in 1999 and was named a full professor with tenure in 2010.

Mabokela is expected to start Jan. 16 in her new position at the U. of I.

Named a Fulbright New Century Schol- ars Fellow in 2006, she currently is co-in- vestigator on a $24 million research project sponsored by the United States Agency for International Development designed to ad- dress critical global food problems.

The work focuses on the effects of climate change, popu- lation growth and rapid ur- banization, and how to develop and train the next generation of global prob- lem-solvers.

The appointment is among the most internationally active of the nation’s public research universities, said Issamn A. Adesida, the U. of I’s provost and vice chan- cellor for academic affairs, and it is critical to the university’s land grant mission to ex- pand and deepen those relationships.

“Professor Mabokela is a proven scholar with academic and administrative expertise in higher education and an incredible level of involvement in the global community,” Adesida said. “She is exactly the right per- son at the right time to lead our strategic ef- forts going forward.”

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ACHIEVEMENTS 13
BRIEF NOTES 14
DEATHS 7
On The Job 3

Fellows named

Five faculty members have been named fellows of the Committee on Institutional Cooperation’s Academic Leadership Program.

INDEX

ACHIEVEMENTS 13
BRIEF NOTES 14
DEATHS 7
On The Job 3

Leadership Program.

PAGE 6

Inside Illinois

F O R F A C U L T Y A N D S T A F F , U N I V E R S I T Y O F I L L I N O I S A T U R B A N A - C h a m p a g n e • h t t p : / / n e w s . i l l i n o i s . e d u / i i

PAGE 6

In This Issue

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PAGE 6
Senates to weigh in on revision of university statutes

Mike Helenthal
Assistant Editor

Senators to weigh in on revision of university statutes

The statutes, being reviewed by a faculty-led committee at the request of the U. of I. Board of Trustees, are the basic organizing documents of the university and define its governing structure. They haven’t been wholly revised in 30 years or more.

“We wanted to make them clearer, easier to understand and much more straightforward in the presentation,” said Nicholas Burbules, a professor of education policy, organization and leadership, and a member of the committee charged by the board to review the statutes.

“Numerically, there are a lot of changes, but most of those changes were kind of a mess,” he said. “I think the documents will be much more relevant and in much better shape after the process is completed. It will help head off misunderstandings in the future.”

Revision work to this point has suggested three kinds of changes: correcting inaccurate or out-of-date text; refining practices that may have changed because of legislation and addressing sections that are ambiguous, vague or open to interpretation.

The suggested changes sent to the three campus senates and an advisory committee by explanation of the rationale behind each change.

“We want to make sure the statutes do what they were designed to do,” Burbules said. “We want to speak with a more consistent voice. It’s been a lot of work, and a lot of the work is still to go.”

The board has set a spring deadline for the revisions, now under review by the senates, to submit to the board’s Committee on Academic Policy for consideration. In an effort to meet the deadline, the committee plans to submit what they’ve reviewed to the senate in port, and they may have changed because of legislation.

“We want to make sure that when these changes are made, that they are not misinterpreted and mischaracterized,” he said. “We’re already aware that this committee didn’t follow those rules.”

Nicholas Burbules, a senator and professor of landscape architecture, would have taken the issue to the Senate and got 100 percent of the faculty to support his recommendation for changes in hiring policy.

“Ruggles argued that the committee was not free of bias,” he said. “The chancellor did not respect them. What changed was the will to listen to the faculty.”

The resolution referred to a specific statute that says, “Appointments shall be made solely on the basis of the special qualifications of the individual for the work demanded in the position,” and goes on to include wording that gives the provost the final decision in such matters.

“Therefore be it resolved that it (the formation of the task force) would contradict the University’s own guidelines.” Nicholas Burbules, a senator and professor of education policy, organization and leadership, said Ruggles’ resolution misconstrued the character of the committee.

Her contention that the task force would make recommendations “behind closed doors” is false, he said, noting that any recommendation for changes in hiring policy would be presented to the full senate and provost for consideration.

He said Ruggles’ contention that the committee was planning to grant the chancellor new powers was without merit, as well.

The idea behind the task force, he said, was to identify any ambiguities and to “clearly define the constraints on those powers” so that a case like Salaita’s does not happen again.

“The ad hoc committee is simply responding to the fire alarms that many people on campus were trigger,” said Mutt Hill, a student senator. “There are no secret Installers.”

Senators also turned down a resolution asking the body to take a stance against a massmail sent Aug. 22 by the chancellor, warning that department leaders policy stance on academic freedom that ran counter to university statutes.

“We have canes, and will not tolerate at the U. of I. personal and disrespectful words or actions that demean and abuse either viewpoints themselves or those who express them,” Wise said, adding that the email titled “The principles on which we stand.”

Detractors said the statement suggested there were predetermined limits on campus free speech.

He said the board has set a spring deadline for the revisions, now under review by the senates, to submit what they’ve reviewed to the board’s Committee on Academic Policy for consideration.

State universities have the power to exempt specific categories of employees from state and federal laws.

Chancellor Phyllis M. Wise assured campus academic professionals at the Oct. 2 CAP meeting that the university is doing everything in its power to retain exemption authority and to resist outside efforts to restructure their positions or to change their classification.

“Academic professionals are critical to everything we do,” Wise said. “This really affects all of the higher education institutions of Illinois, and we are trying to get other universities to support it, and she’d like to see the statutes reviewed every 10 years to ensure their relevance.

It also would address situations that might affect campus organization, such as administrative decisions to rearrange discipline.

The resolution was returned to committee after complaints that the term “educational programs” was too broad.

Academic professionals find support in classification dispute

By Mike Helenthal
Assistant Editor

Academic professionals find support in classification dispute.

As the debate over position classification continues, academic professionals are finding allies on and off campus.

At issue is the State University Civil Service System’s auditing of university positions, which academic professional leaders say has been unfairly weighted to show that units on campus have improperly created AP positions.

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members will meet with smaller groups and even individuals by request as the year progresses. Sometimes the training is designed to complement a student’s dissertation or a faculty member’s published research.

"It shows the positive impact that a civil service worker can have," he said. "Rudd never left his first love – music – and he spends a good amount of his free time playing guitar. He’s not in the music scene like he was when he was younger and a member of local bands, but he still plays occasionally with friends. Like his career path, the musical style is decided "by a bit of everything," with improvisation pointing the way. He met his wife, Gina, who works at the College of Education, eight years ago, and they live in downtown Urbana with a 13-year-old son from her previous marriage. She loves music and says "it’s a wonderful life." He says he loves Urbana because it is modern and hip and "creates a certain energy" with its comfortable coffee spots, eateries, and stores and wide range of food choices.

One of the perks he has found working with the University is the ability to access the vast library resources, not as an employee but as a patron. "I’m spoiled now," he said. "I use the library all the time."
Among the newcomers to the Urbana campus are faculty members whose appointments began this summer or fall. Inside Illinois continues its tradition of introducing some of the new faculty members on campus and will feature at least two new colleagues in each fall issue.

**Evan P. Starr**

Assistant professor, School of Labor and Employment Relations

**Education:** Ph.D. (economics), M.A. (economics), University of Michigan; B.A. (mathematics, economics and Spanish), Denison University

**Courses teaching:** Statistics, spring, 2015; labor economics in the future.

**Research:** Non-compete agreements. “Evan’s research fits squarely in the emerging field of personnel economics,” said Fritz Drasgow, the interim dean of LER. “Workers in a very broad range of occupations are required to sign non-compete agreements before they begin working. These non-compete agreements are designed to prevent workers from quitting and taking valuable firm knowledge to a competitor. Evan constructed a very clever empirical test of his theory using a large, nationally representative U.S. firm, and found that firms are more willing to invest in the training of their workers where non-compete agreements are more easily enforced. This research is making an important contribution to the growing labor economics literature on firm-sponsored training.”

**Why Illinois?** “The primary reason I chose Illinois is because of the research synergies between the School of Labor and Employment Relations, the department of economics and the College of Business,” Starr said. “My research in labor economics benefits greatly from the opportunity to meet with HR representatives from Fortune 500 companies, often alums of this university, who come to campus to recruit our HR students from LER. The applied microeconomics group across campus is top-notch in their rigorous evaluation of empirical research. The combination of these groups made Illinois attractive to me because of the opportunities to grow intellectually, learn from my peers and create more impactful research.”

**Tandy Warnow**

Founder Professor of Bioengineering and Computer Science, College of Engineering

**Education:** Ph.D. (mathematics), University of Southern California; B.A. (mathematics), University of California at Berkeley

**Research interests:** Multiple sequence alignment and phylogeny estimation (both gene trees and species trees) and metagenomic analysis, bioengineering, Big Data

“A joint hire between bioengineering and computer science, professor Tandy Warnow brings decades of expertise working at the intersection of bioinformatics and Big Data,” said Rob A. Rutenbar, the head of computer science. “Her work combines mathematics, computer science and statistics to develop algorithms with improved accuracy for large-scale and complex estimation problems in phylogenetics and metagenomics. She works with extremely large datasets to create new insights into the evolution of life on this planet. Her research has the potential for wide-ranging impact across a number of fields. She will develop a new course on computational biology which will appeal to students in bioengineering and computer science, as well as other biological disciplines.”

**Why Illinois?** “Of all the places my husband and I had offers, Illinois was by far the most exciting for us,” Warnow said. “My husband, George Chacko, was offered a very interesting job working with Peter Schiffer, the vice chancellor for research, and I was offered a position in computer science and bioengineering. The opportunities for me at Illinois to expand my research to new problems and to collaborate with outstanding faculty members and students in multiple disciplines was really enticing. I chose Illinois because I feel my research career will flourish here, but the sense of community and friendliness in Champaign-Urbana also was a big draw for us!”
During the summer, approximately 500 of the campus' specialized faculty members were officially certified as a unionized bargaining unit represented by the Campus Faculty Association. The campus has been receiving many questions about the impact of this process for its units and for those now represented by this union, Academic Human Resources has developed a list of frequently asked questions to assist faculty members. Inside Illinois will run the list in two sections; this is part one of two. (For the full FAQ, go to www.ahr.illinois.edu/facultySept14FAQs.pdf.) If you have questions that are not answered in this document, contact Heather Horn at hwilson@illinois.edu or 217-333-6747.

1. If I am now represented by the Campus Faculty Association, will I be able to receive a salary increase as part of the campus salary program for this academic year?

No. Not until the issue is negotiated with the union. Because specialized faculty have chosen to unionize, our new reality is that wages are negotiated through collective bargaining.

2. What does it mean to be represented by a union?

It means that the union (CFA) negotiates the wages, hours and terms and conditions of your employment collectively. You may no longer negotiate those matters with university administrators (e.g., your department head, dean, etc.) on your own behalf.

3. How did this happen?

Fifty percent plus one of the 473 specialized faculty members at Illinois signed cards, papers or petitions that authorized it.

4. I did not get to vote in an election on the question of establishing a union. Do all specialized faculty have the right to vote in an election?

No. Illinois law allows a union to be recognized through a so-called "card check" procedure, which involves collecting signatures from a "majority interest" of employees in the proposed bargaining unit. A majority is defined as 50 percent plus one employee in the proposed unit.

5. When did the specialized faculty or non-tenure track faculty form a bargaining unit (unionize)?

On July 8, 2014, the university received notification from the Illinois Educational Labor Relations Board (IELRB) that the Campus Faculty Association, IFT-AFT, AAUP (CFA) had been certified as the bargaining unit representing non-tenure track (NTT) faculty ("specialized faculty") on the Urbana Campus.

6. Who is in the union, and what specialized faculty positions are included in the bargaining unit?

Positions with a total FTE equal to or greater than 51 percent with the following specialized faculty titles (including those titles with adjunct and visiting modifiers) are included in the CFA bargaining unit: instructor, senior instructor, lecturer, senior lecturer, clinical associate, research associate, teaching associate, clinical assistant professor, clinical associate professor, medical professor, research assistant professor, research associate professor, research professor, teaching assistant professor, teaching associate professor, teaching professor, adjunct assistant professor, adjunct associate professor, adjunct professor.

7. What about postdoctoral research associate, intern, visiting scholar and emeritus faculty positions?

These positions are excluded from the CFA specialized faculty bargaining unit.

8. Are specialized faculty in all colleges included in the CFA specialized faculty bargaining unit?

No. Specialized faculty in the College of Medicine, College of Veterinary Medicine and the College of Law are not included in the CFA bargaining unit.

9. How can I verify whether I am in the CFA specialized faculty bargaining unit?

Check with your college-level budget and/or human resources administrator. For more information, contact the Office of Academic Human Resources, specifically Heather Horn, hwilson@illinois.edu, 217-333-6747, or Sharon Reynolds, sreynolds@illinois.edu.

ENDORSEMENTS, CONTINUED FROM PAGE 1

"There’s a proven benefit for the university to show its students that it is providing food through sustainable farming,” he said. “We can confirm and make factual statements, but we can’t get into superlatives or show favoritism.”

Brian Mertz, the senior client relationship consultant for Campus Information Technologies and Educational Services, said the wording in the prior policy seemed too restrictive to risk offering public endorsements — whether those endorsements benefited the university or not.

At least that was the interpretation when his department declined an offer last year from Microsoft to participate in an advertising campaign touting its Unified Communications system, which the Urbana campus started using two years ago.

“They wanted us to give a testimonial about our UC rollout because we’re one of the biggest environments for UC that Microsoft supports,” he said.

“We really wanted to say ‘yes’ to the endorsement, but felt it wasn’t allowed under university policy,” said Tony Runovsky, CITES associate director for enterprise infrastructure. “Then we heard about the changes to the policy this summer and realized we could at least have made some statement of fact about the product and how we were using it, as long as we didn’t endorse the product.”

“Now that we know we could have safely offered a lot of facts, we might have at least given them our usage statistics, which are quite impressive.” Mertz said.

The revised endorsement policy, as well as the process to get prior approval for an endorsement, is available online.

InsideIllinois | Nov. 6, 2014

ON THE WEB
www.ahr.illinois.edu/facultySept14FAQs.pdf

visiting assistant professor
visiting associate professor
visiting professor
Five faculty members named CIC-ALP fellows

Five U. of I. faculty members have been named 2014-15 fellows of the Committee on Institutional Cooperation’s Academic Leadership Program.

The program provides leadership development for accomplished faculty members who are interested in learning more about academic administration. It is designed to introduce faculty members to issues and challenges in higher education and offers them opportunities to meet with leaders at CIC member institutions. Fellows are selected by each CIC campus; the CIC comprises the Big Ten universities and the University of Chicago.

“The CIC Academic Leadership Program is a great development program,” said Elabbas Beemamoun, the vice provost for faculty affairs and academic policies and the campus CIC liaison. “The selected fellows, who come from different colleges on campus, get the opportunity to interact with each other and with more than 60 peers from across the CIC.

“In addition to on-campus meetings, the fellows attend seminars covering various topics at the forefront of higher education, such as affordability and access, diversity and dealing with different types of challenges. The feedback we consistently get from former fellows is that the experience was valuable and enriching. Some of our former fellows have gone on to become leaders on our own campus and at other universities.”

ON THE WEB

cic.net/projects/leadership/alp/

This year’s fellows:

Carla E. Cáceres is the director of the School of Integrative Biology and a professor of animal biology at the U. of I. Her research is focused at the interface of population, community and evolution ecology, and addresses questions such as how biodiversity influences community assembly and the spread of infectious diseases. In addition to her research funding from the National Science Foundation, she also is a co-principal investigator on two NSF training grants, one for graduate students (Integrative Graduate Education and Research Traineeship) and one for undergraduate students (BioMath). She has been recognized for excellence in both research and teaching, including a Presidential Early Career Award for Scientists and Engineers and the U.S. Professor of the Year sponsored by the Carnegie Foundation. She wrote “Harnessing the Wind: The Art of Teaching Modern Dance,” which was published in 2003, and the Wind: The Art of Teaching Modern Dance, which was published in 2003, and the National Endowment for the Arts and Ruth Page Awards for choreography and performance. She has received a Fulbright Scholar Award and is serving on the Fulbright Review Panel. She wrote “Harnessing the Wind: The Art of Teaching Modern Dance,” which was published in 2003, and the National Endowment for the Arts and Ruth Page Awards for choreography and performance. She has received a Fulbright Scholar Award and is serving on the Fulbright Review Panel.

George F. Czapar is an associate dean and the director of U. of I. Extension and a professor of crop sciences. He earned his B.S. and M.S. in agronomy from the U. of I. and his Ph.D. in agronomy from Iowa State University. His research and Extension programs focused on interdisciplinary projects that address the environmental impacts of agriculture. He also teaches in the Campus Honors Program. He led a Strategic Research Initiative in water quality for the Illinois Council on Food and Agricultural Research (C-FAR) and helped establish the Illinois Council on Best Management Practices (C-BMP). He previously was the director of the Center for Watershed Science at the Illinois State Water Survey at the Prairie Research Institute and water quality coordinator for U. of I. Extension. Czapar received the Campus Award for Excellence in Public Engagement and the Award for Excellence in Teaching and Outreach from the College of Agricultural, Consumer and Environmental Sciences.

Jan Erkert is the head of the department of dance at the U. of I. As artistic director of Jan Erkert and Dancers from 1979-2000, she created more than 70 works that toured nationally and internationally. Erkert and company have been honored with numerous awards, including fellowships from the National Endowment for the Arts and Ruth Page Awards for choreography and performance. She has received a Fulbright Scholar Award and is serving on the Fulbright Review Panel. She wrote “Harnessing the Wind: The Art of Teaching Modern Dance,” which was published in 2003, and the National Endowment for the Arts and Ruth Page Awards for choreography and performance. She has received a Fulbright Scholar Award and is serving on the Fulbright Review Panel.

Kevin T. Pitts is a professor of physics at Illinois. He earned his Ph.D. in 1994 from the University of Oregon and after a postdoctoral position at Fermi National Accelerator Laboratory, moved to the U. See CIC-ALP FELLOWS. Page 7

See CIC-ALP FELLOWS. Page 7

Beverly Sue Fagnier, 68, died Oct. 17 at Carle Foundation Hospital, Urbana. Fagnier worked for Computing and Communications Services Office (now CITES) from 1974 to 1999.

Jo Ann Fley, 84, died Oct. 15 at Clark-Linsey Village, Urbana. During her 32-year career at the U. of I., Fley served as assistant dean of women from 1960-64 and as a professor of higher education from 1965-92. Memorials: Community United Church of Christ, 905 S. Sixth St., Champaign, IL 61820, community-ucc.org; Eastern Illinois Foodbank, 2405 N. Shore Drive, Urbana, IL 61802, www.eifoodbank.org; or Caring Bridge, Donation Processing Center, P.O. Box 6032, Albert Lea, MN 56007, https://www.caringbridge.org.

Frederic Coplas Jacies, 80, died Oct. 20 at Carle Foundation Hospital, Urbana. Jabes was a professor of American history at the U. of I. for 37 years, retiring in 2005 as professor emeritus. Memorials: Josh Gottlieb Memorial Fund for Lymphoma Research, 509 E. Holmes, Urbana, IL 61801, joshsfund.org.

Dick Justice, 68, died Oct. 21 at Carle Foundation Hospital, Urbana. Justice was associate dean of students in the Office of Student Affairs for 27 years, retiring in 2008. Memorials: St. Patrick Church building fund, 708 W. Main St., Urbana, IL 61801, www.stpaturbana.org; or the Sandra J. Schulze American Cancer Society Hope Lodge, 411 Second Street NW, Rochester, MN 55901, cancer.org.


Wayne McClain, 60, died Oct. 15 at Carle Foundation Hospital, Urbana. McClain was an assistant coach for Fighting Illini men’s basketball from 2001-12.

Richard G. Semonis, 84, died Oct. 27 at his Champaign home. He worked at the Illinois State Water Survey for more than 36 years, retiring in 1991. From 1975 on, he served as principal scientist and adjunct professor. He served as chief for the last six years. Memorials: Prosperity Gardens, 302 N. First St., Champaign, IL 61820; or Eastern Illinois Foodbank, 2405 N. Shore Drive, Urbana, IL 61802, www.eifoodbank.org; or Caring Bridge, Donation Processing Center, P.O. Box 6032, Albert Lea, MN 56007, https://www.caringbridge.org.
Male bluefin killifish signal different things with different fins

By Diana Yates

Life Sciences Editor

Animal biology professor Rebecca Fuller led a study of the color-coded signals bluefin killifish display on their fins, which the study revealed present messages to other fish.

“Bluefin” killifish, the first time in nature, are called “bluefin” killifish, Lasmipedia gosneri. Bluefin, and engage in homophobia teasing. Previous studies suggested that melanin, the black pigment, is a badge of status among males, and aggressive toward other males. In the new study, Fuller and her findings are consistent with previous research that suggests females respond positively to the brightly pigmented tails of potential mates, Fuller said.

Much less is known about pterin coloration on the tailfin. Fuller and Johnson discovered that richer carotenoid coloration on the tailfin was associated with better body condition, lower parasite infection and higher spawning success. Brighter pterin coloration was associated with lower parasite infection and higher spawning success, the researchers found.

Boys who bully peers more likely to sexually harass others

By Sharita Forrest

Education Editor

Adolescent boys who bully peers and engage in homophobic teasing are more likely to perpetrate sexual harassment later on, according to a study of middle-school students conducted by researchers at the U. of I. and the U.S. Centers for Disease Control and Prevention.

Boys who engage in bullying are 4.6 times more likely to commit sexual harassment two years later, according to the study, published online by the Journal of Interpersonal Violence.

Similar links were found among boys who participate in homophobic teasing. Boys who tease peers with gender-based epithets are 1.6 times more likely to perpetrate sexually harassing behaviors two years later, the study found.

More than 970 students at six middle schools in the Midwest were surveyed for the study. The research was supported by a CDC grant to Dorothy L. Espelage, the Gutgsell Endowed Professor of child development in the department of educational psychology at Illinois. The department is a unit within the College of Education.

The findings support the existence of a bully-sexual violence pathway, whereby adolescent bullies who participate in homophobic name-calling are at increased risk for committing sexual harassment over time. The authors of the study — Kathleen C. Basile and the late Merle E. Hamburger, both of the CDC, and Espelage — proposed the existence of such a pathway in a 2012 study.

Sexual harassment — defined in the study as unwanted sexual commentary, sexual rumor spreading and unwanted touching — is widespread among youth, researchers have found. While girls are victimized most frequently, boys can be targets as well.

Significant numbers of gay, lesbian and transgender youth experience homophobic teasing and other forms of sexual harassment, and good spawning success. This suggests that females respond positively to the brightly pigmented tails of potential mates, Fuller said.

Much less is known about pterin coloration on the tailfin. Fuller and Johnson discovered that richer carotenoid coloration on the tailfin was associated with better body condition, lower parasite infection and higher spawning success, the researchers found.

“We are finding that communication is complicated in nature and that animals have evolved ways to send different messages to different receivers,” Fuller said. “In the case of bluefin, multiple messages are being presented by three distinct pigments that are in three different areas of the body. Both females and males are getting these messages. Males are paying attention to the melanin, most likely, and females are paying attention to these more-colorful fins.”

The National Science Foundation Division of Environmental Biology and the U. of I. provided funding for this study.

Mixed messages

Animal biology professor Rebecca Fuller led a study of the color-coded signals bluefin killifish display on their fins, which the study revealed present messages to other fish.

“Bluefin” killifish, the first time in nature, are called “bluefin” killifish, Lasmipedia gosneri. Bluefin, and engage in homophobia teasing. Previous studies suggested that melanin, the black pigment, is a badge of status among males, and aggressive toward other males. In the new study, Fuller and her findings are consistent with previous research that suggests females respond positively to the brightly pigmented tails of potential mates, Fuller said.

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Long-term temperature fluctuations influence climate beliefs

By Craig Chamberlain

Faculty: Teaching, research are potent educational mix

A

common perception, especially outside the university classroom, is that teaching and research are two separate domains, with little overlap.

That’s not the reality, however, for many U. of I. faculty members – including those whose 18 essays appear in “An Illinois Sampler: Teaching and Research on the Prairies,” recently published by the U. of I. Press.

For those faculty members, “there is an active and dynamic link” between the two, says Antonette Burton, a professor of history and co-editor of the collection with Mary-Ann Winkelman, a former campus coordinator for programs on teaching and learning at Illinois, who is now at the University of Nevada, Las Vegas.

“These are not people who think of teaching as one thing and research as another,” Burton said. “They want to explain how the two are connected in a variety of ways.”

The book describes the teaching-research link as part of a “feedback loop of education” that works across disciplines and in many different learning spaces, “from virtual to concrete, from desks to drafting tables to laboratory benches to archive shelves, from the dance floor to the ocean floor,” from Illinois prairies to African farms.

Contributors include faculty members from the arts, humanities, engineering, and social and natural sciences. Their essays average about seven pages each.

“As faculty, we know how our colleagues bring their passion about their research work into both introductory surveys and more specialized seminars,” Burton said. “We also know how invested we are in helping students appreciate the research process and its transformative impact,” as well as the value of “deep study” on a topic, she said.

“But it’s not clear that a broader public has any window into how that plays out in specific classrooms or labs or studios,” Burton said, and that is one goal of the book.

Kyle Mays, a doctoral candidate in history, who served as the research assistant on the book, says in the final essay that the book also addresses one of the most important issues facing the current generation of students: practical education versus liberal education.

“It challenges the idea that science and humanities are so different that they can’t operate, if not together, at least in parallel fashion,” Mays writes. “This book should remind us that, when students become central, the humanities and sciences are not all that different, research and teaching are one, and the beneficiaries are students, their teachers, and our society.”

The essay authors: Nancy Abelnmann, anthropology; Flavia C.D. Andrade, kinesiology and community health; Jayadev Athreya, mathematics; Thomas J. Bassett, geography and geographic information science; Karen Flynn, gender and women’s studies; Bruce W. Fouke, geology, Institute for Genomic Biology; Julie Jordan Gunn, music; Laurie Johnson, Germanic languages and literatures; Yi Lu, chemistry; Rebeca Netti-Fiod, dance; Luisa-Maria Rosu, research associate, I-STEM education initiative; David Tapping, landscape architecture; Carol Spindel, adjunct lecturer, English; Mark D. Steinberg, history; William Sullivan, landscape architecture; Richard J. Tapping, medical microbiology; Bradley Tober, art and design; and Kate Williams, library and information science; and Lauren A. Denfro-Corales, a student in the Honors Program in the College of Liberal Arts and Sciences.

ON THE WEB
press.uillinois.edu
Rivers flow differently over gravel beds, study finds

By Liz Ahlberg
Physical Sciences Editor

River beds, where flowing water meets silt, sand and gravel, are critical ecological zones. Yet how water flows in a river with a gravel bed is very different from the traditional model of a sandy river bed, according to a new study that compares their fluid dynamics.

The findings establish new parameters for river modeling that better represent reality, with implications for field researchers and water resource managers.

“The shallow zones where water in rivers interacts with the subsurface are critical environmentally, and how we have modeled those in the past may be radically different from reality,” said Jim Best, a professor of geology, geography and geographic information science at the U. of I. “If you’re a river engineer or a geomorphologist or a freshwater biologist, predicting where and when sediment transport is going to occur is very important. This study provides us with a very different set of conditions to look at those environments and potentially manage them.”

Best and postdoctoral researcher Gianluca Blois led the study at the U. of I., in collaboration with colleagues in the United Kingdom. The team published its findings in the journal Geophysical Research Letters.

The researchers used a specially constructed flume in the Ven Te Chow Hydraulics Laboratory at Illinois to experimentally compare scenarios ranging from systems laboratory at Illinois to experimental scenarios also disproved one popular theory that explained the difference between classic models and field observations for the formation of bed topography, such as dunes.

“Bedforms formed in fine sediments are known to be substantially different from those formed in gravel beds, but we just didn’t know why,” Blois said. “People before us suggested that those differences were due to the roughness of the grains. But we introduced the bed permeability, just like real rivers. For us, with our new measurement technique, allowed us to demonstrate that most of the stress variation is actually coming from fluid emerging from the permeable bed, rather than roughness.”

The maps of water flow that the experiments produced could lead to better predictive models, so that researchers can more accurately predict and study how nutrients and pollutants travel and accumulate in rivers. These new models also could provide insight into the growth and behavior of organisms that thrive in the narrow zone where river flow meets the river bed.

“For example, when salmon spawn in gravel-bed rivers, they basically make a depression in the gravel, into which they lay their eggs,” Best said. “By doing that, not only do they protect the eggs, but they create a bump in the sediment that creates a pressure distribution that would keep fine grains from going into the bed, which would be detrimental to the eggs. It’s fascinating that fish actually take advantage of these flow dynamics.”

The researchers are working with collaborators around the world to study how permeability affects turbulence above the bed, how this affects the organisms that grow in the pore spaces, and how tiny particles and dissolved substances accumulate in porous riverbeds.

“It’s going to change the way we conceptualize these systems and model them,” Blois said. “We’re trying to raise awareness of the fact that we are now able to measure the complex flow dynamics in these challenging environments, and that’s going to open up a new paradigm for river research.”

The UK Natural Environmental Research Council supported this work. 

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River modeling
Rivers researchers used a specially constructed model to study how water flows over gravel river beds. Postdoctoral researcher Gianluca Blois, left, and professor Jim Best also developed a technique to measure the water flow between the pore spaces in the river bed.
Watching 3-D videos of trees helps people recover from stress

By Sharita Forrest

Education Editor

Nov. 6, 2014

Writing a dissertation at the University of Illinois, Bin Jiang, a postdoctoral fellow and lecturer at the University of Hong Kong, found that viewing 3-D videos of residential streets significantly aids people’s recovery from stressful events, according to research by lecturer Bin Jiang, right, and professor William C. Sullivan. The study was published recently in the journal Environment and Behavior.

The study found that viewing 3-D videos with about 2 percent tree canopy increased participants’ stress-recovery benefits when they viewed tree canopy in the 24 to 34 percent range, and stress recovery declined when the percentage of tree canopy viewed surpassed 34 percent.

While women did not show the same physiological responses in salivary cortisol and skin conductance levels as the men, the researchers’ analyses of the self-reports suggested that the women also experienced stress-reduction benefits that increased proportionally with the percentage of tree canopy viewed.

“More than half – 41 percent – of male and female participants who watched videos with minimal tree canopy described calming effects in their self-reports. However, when the percentage of tree canopy increased to 36 percent, more than 90 percent of viewers reported feeling calm or relaxed while watching the videos. And all of the participants who viewed videos with the maximum percentage of tree canopy reported feelings of well-being.”

The study suggests that maybe by creating widely dispersed areas within communities you can help reduce the stress people experience on an everyday basis, which contributes to these diseases,” said William C. Sullivan, a professor of landscape architecture at the University and one of Jiang’s co-authors.

“These studies have a bearing on how we design places, from the smallest aspect of a house, such as the number of windows and the orientation of the views, to the design of a neighborhood,” Sullivan said. “We have to be vigilant about protecting easy access to natural or green spaces for people and the design of cities. We should have interconnected and widely dispersed green spaces accessible to all inhabitants. And my sense is that when we do that, we’ll reap tremendous ecological and human health benefits.”

A paper about the research was published recently in the journal Environment and Behavior. Co-authors of that paper were Linda Larsen, a senior instructor of English at Illinois; Dongying Li, a doctoral candidate in landscape architecture at Illinois; and Sullivan.

A second paper was accepted for publication in the journal Landscape and Urban Planning. Chun-Yen Chang, the director of the Healthy Landscapes, Healthy People Lab at National Taiwan University, and Sullivan were Jiang’s co-authors on that paper. Jiang has accepted a faculty appointment at the University of Hong Kong, which he will begin in January 2015. ♦
Portugal’s resource misallocation caused an economic slump

By Phil Ciciora  Business and Law Editor

A new paper co-written by a pair of U. of I. economists says in-
creasing resource misallocation in Portugal contributed to at least 15 years of sluggish economic growth—a conclusion that also could explain the poor economic performance of several southern and peripheral European Union countries in the lead-up to the eurozone crisis of 2009.

In a paper recently presented at the conference of the European Association of Economists at Illinois, and Christine Richmond, a professor of agricultural and consumer eco-
nomists at Illinois, found that deteriorating efficiency in the manufacturing sector was responsible for shaving about 1.3 percent-
age points from the country’s annual gross domestic product from 1996 to 2011. The finding is significant, since the Portuguese economy during the period only grew an average of 1.5 percent per year, the re-
searchers say.

“You would expect a lot of growth in a country like Portugal, given the funds and resources that were channeled into it during that period of time,” Dias said. “But what we actually found was a significant source of lost opportunity for the country.”

According to the paper, the Portuguese economy between 1995 and 2001 underwent a structural transformation in the run-up to the introduction of the euro, shifting away from a manufacturing-based econ-
omy to a service-based one.

How to account for the expense of competitiveness and higher indebtedness, the researchers say. By 2010, the interest rates on long-term Portuguese government bonds started rising, mirroring those of debt-ridden Greece.

To investigate whether a change in allocation could have contributed to the poor economic performance in Portu-
gal, Dias and Richmond studied firm-level data from 1996-2011 to measure the extent of resource misallocation in the Portuguese economy.

They found that within industry misloc-
ination in Portugal almost doubled dur-
ing that time, with those results primarily being driven by the service sector, which constitutes construction, ground trans-
portation, transportation support services (e.g., road and toll-road management and maintenance); support services (e.g., bookkeeping, counting, law and market research) and the wholesale of food and drinks.

“We observe a high concentration in just five industries of the service sector, which accounts for 72 percent of the total increase in resource misallocation,” Richmond said.

“This means that if the levels of efficiency were substantially higher and increased much faster than those found in both the manufacturing and agricultural sectors.

“Since then, we realized that it is the service sector that is so much less efficient at allocating resources than manufacturing,” Dias said.

“Manufacturing in Portugal is about as ef-
cient as manufacturing in France, which is about as efficient as the U.S. But we have no similar comparison for services or non-
tradable sectors.”

Financial integration of the EU ostensi-
bly would improve resource allocative effi-
ciency to future risk-sharing and most re-
nomic growth. But that hasn’t necessarily happened for some southern and peripheral European countries like Greece, Ireland, Portugal and Spain, the so-called “GIPS” of the eurozone. Those countries have ex-
perienced stagnant or declining productivity and a loss of competitiveness, despite large capital inflows in the decade preceding the onset of the 2009 crisis, the researchers said.

“Greece was a sexier case in a way, be-
cause there were just so many blatant prob-
lems there,” Richmond said. “Portugal is a smaller country that’s not on everyone’s radar, and their problems weren’t as blatant as Greece’s problems.”

Can the story of Portugal help econom-
ists understand what happened in the other troubled EU countries? Possibly, Dias and Richmond said.

“We knew that in both Spain and Ire-
lnd, the big problem was construction,” Dias said. “Portugal has flown almost com-
pletely under the radar. But according to our calculation, it was construction that most contributed to this big decline in allocative efficiency. Twenty-five percent of our estimate comes from construction. So even though construction is not a big contribu-
tor to Portugal’s GDP, it’s very important in terms of production.”

The research also is important if other eastern European countries—Slovenia, Latvia and Estonia, among them—seek to join the EU.

“In the run-up to those countries join-
ing the EU, they get access to EU money to bring them up to a European level,” Rich-
mond said. “They would have the same potential problems that Portugal had—all this money coming in, how do they spend it properly? How can they put it to work in the best way to boost growth, but not end up in a Portuguese situation? Some of the eastern European countries have had their share of problems, and all of them are at risk of falling into the same trap.”

Their co-author was Carlos Robalo Marques of the Banco de Portugal.

Classification. Continued from Page 12 campus leaders were continuing to argue for the university’s retention of exemption authority.

The Urbana-Champaign Senate passed a resolution at its Oct. 20 meeting that offers support for campus academic profes-
sionals and states that SU CCS has exceeded its authority.

The basis for the resolution, a statement passed by the Council of Illinois University Senates in September, says: “The CUS is gravely concerned about the actions of the executive director and staff of SU CCS toward reclassifying prin-
cipal administrative/academic professional positions within universities, as well as their adversarial audit activities and the threat thereof, without adequate and wide-
spread consultation, including with the presidents, chancellors, faculty leadership and human resource directors of the respec-
tive campuses.

“These actions strike us as both arbitrary and capricious, and lacking in the transpar-
ency we expect from our public bodies.”

The Illinois Board of Higher Education’s Faculty Advisory Committee also passed a resolution last year showing support for universities retaining exemption authority and calling for greater faculty involvement in the “stakeholders group” convened by SU CCS.

Tom Morelock, the SU CCS executive director, lost a bid last year to take exemp-
tion authority away from the universities and give it to his agency.

In arguments before the Merit Board, the agency’s governing body, Morelock said universities, since being granted the author-
ity about 16 years ago, had misused it and regularly misclassified positions.

The authority was taken away from SU CCS at that time because university leaders had complained the rules contrib-
uted to hiring delays. But Morelock said the universities had since husbanded the system to avoid civil service employment rules.

“Unfortunately, that high standard of ac-
countability … has not been consistently attained,” he said at last year’s Merit Board meeting. “(Exemption authority) should never be construed as an employer right.”

After the board vote, which included three U. of I. trustees, Morelock said he was disappointed with the decision.

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Ads removed for online version
Winsners announced in energy conservation program

Eight facilities on the Urbana campus won funding for building improvements as recipients of the 2014 Energy Conservation Incentive Program awards. The awards were announced Oct. 22 during the Illinois Climate Action Plan (iCAP) Forum.

The program encourages energy conservation through behavioral and structural changes in academic units and the cooperation of building occupants. Each year, eight campus buildings receive ECIP awards in two categories.

The program measures energy conservation in buildings as the percentage difference of energy usage during the most recent fiscal year compared to the previous fiscal year. Building energy consumption is tracked online in the Energy Billing System. New users may request EBS authentication from Facilities and Services’ Utilities and Energy Services Division.

This year’s winners:

**ENERGY ADVANCEMENT CATEGORY** (for buildings whose energy reduction is the result of central funding from a significant energy conservation project):
1. Admissions and Records Building (52.8 percent)
2. Business Instructional Facility (38.1 percent)
3. Freer Hall (19.3 percent)
4. School of Labor and Employment Relations (30.0 percent)

**OCCUPANT ACTION CATEGORY** (for buildings that have not benefited from substantial energy conservation projects in the last fiscal year and savings have been generated by actions taken by building occupants):
- Art East Annex, Studio 1 (21.5 percent)
- Foreign Languages Building (19.3 percent)
- Harding Band Building (18.8 percent)
- Spurlock Museum (16.4 percent)

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**SECRETARIAT**

Katherine Galvin, the associate provost for administrative affairs, has been named the 2014 Boss of the Year by the U. of I. Secretariat. She was nominated by Jane Baumgartner, an administrative aide in the Office of the Provost.

Also nominated were Helen Coleman, the director of Capital Programs, Facilities and Services, nominated by Leta Summers, administrative aide; and J. Patrick Grenda, academic skills specialist in the College of Medicine, nominated by Regina Cook, office manager.

The Secretariat is an organization for U. of I. employees in certain civil service classifications. The organization seeks to create a high standard of ethics among its members, assists in professional development for its members, and serves as a forum for discussion of issues affecting support staff members at the U. of I.

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**PRAIRIE RESEARCH INSTITUTE**

Senior staff members from the Illinois State Archaeological Survey, which is part of the Prairie Research Institute, were honored with awards during the Midwest Archaeological Conference last month in Champaign.

Thomas E. Emerson, ISAS director, was awarded the Career Achievement Award by the Illinois Archaeological Survey. Andrew Fortier, associate director of special projects, and Dale McElrath, a survey affiliate, were awarded the Charles J. Bareis Distinguished Service Award for contributions to Illinois archaeology by the Illinois Archaeological Survey. Emerson also was awarded the Distinguished Career Award by the Midwest Archaeological Conference.

The award recognizes individuals who have made significant contributions to the field of Midwest archaeology.

**PUBLIC AFFAIRS**

Two photos by News Bureau photographer L. Brian Stauffer were honored by the University Photographers’ Association of America in its October monthly image competition, both in the science and research category.

His photo of a big-headed ant specimen in entomology professor Andrew Suarez’s lab placed second; and his photo of a replica model of the first artificial larynx implanted in a swine that was created with a 3-D printer placed third. The artificial larynx photo was shot for a Campus Insights presentation by Matthew Wheeler, a professor of animal sciences and of bioengineering.
Big Ten documentary

Film honors Native American activist

A new documentary film on Dr. Carlos Montezuma, the first Native American alumnus of the U. of I., will be screened at 7:30 p.m. Nov. 19 at the Art Theater Co-op, 126 W. Church St., Champaign.

The event will include viewing of “Carlos Montezuma: Changing is Not Vanishing,” followed by discussion with the U. of I. documentary producers Alison Davis Wood and Tim Hartn, as well as U. of I. Native American House director James Singleton and U. of I. history professor Fred Hoxie, who worked closely with the filmmakers. The event is free, but those who wish to attend should RSVP online at go.illinois.edu/montezuma.

Montezuma was born in 1866 in the Arizona Territory and named Wassaja or “becken” in his native Yavapai language. As a small boy, he was stolen from his family and sold as a slave. He spent his early childhood on the road with an Italian photographer and performed with Buffalo Bill’s Wild West Show before starting school in Chicago.

In 1886, Montezuma was the first Native American to graduate from the U. of I. and later became one of the first to earn a medical degree. After working for the Bureau of Indian Affairs as a reservation doctor and witnessing widespread poverty and bureaucratic corruption, he fought tirelessly for Native American rights and citizenship. When his own Yavapai tribe faced removal from their ancestral home, Montezuma went to Washington, D.C., to fight for and finally secure their land and water rights, setting a precedent for other Indian nations.

In 1894, Montezuma worked closely with the Fort McDowell Yavapai Nation in Arizona, as well as with Singleton and Hoxie, to chronicle Montezuma’s path from his own assimilation in America’s white society as a young man, to becoming a National leader for protecting Native American people and their culture.

Narration is by Hattie Kauffman, longtime CBS news reporter and member of the Yavapai Nation. The film, produced by the university’s Office of Public Affairs and the Division of Intercollegiate Athletics, received additional support from the Illinois Humanities Council.

The film debuted Nov. 3 on the Big Ten Network. For future broadcast times, visit btn.com.

Wellness Center

Great American Smokeout is Nov. 20

In 1987, Montezuma was the first Native American to graduate from the U. of I. and later became one of the first to earn a medical degree. After working for the Bureau of Indian Affairs as a reservation doctor and witnessing widespread poverty and bureaucratic corruption, he fought tirelessly for Native American rights and citizenship. When his own Yavapai tribe faced removal from their ancestral home, Montezuma went to Washington, D.C., to fight for and finally secure their land and water rights, setting a precedent for other Indian nations.

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BRIEFS, CONTINUED FROM PAGE 14

“Our goal of 250 baskets is to celebrate the 25th anniversary of OVP,” said John Race, OVP program adviser. “With the number of groups participating, we believe we can reach this goal and are excited to see the end result. We’re looking forward to seeing how much our office will contribute to Stone Creek’s Big Give.”

Baskets can be dropped off between 9 a.m. and 5 p.m. daily at the Office of Volunteer Programs in the Illini Union. The Illini Union Quad Shop is open from 7:30 a.m. to 9 p.m. Monday through Friday, and 10 a.m. to 9 p.m. on the weekends.

Saturday Physics for Everyone

Earth’s forces featured Nov. 8

Stephen Marshak, a professor of geology in the School of Earth, Society and Environment, will be the guest lecturer Nov. 8 for Saturday Physics for Everyone. His free public lecture – “Building Mountains: How Forces in the Earth Raise Rock Miles into the Sky” – will begin at 10:15 a.m. in Room 141 Loomis Laboratory.

According to organizers, the highest mountains on Earth rise almost to the heights that jet planes fly. What forces drive the immense mass of a mountain range up against the pull of gravity? This presentation will explore the causes of mountain building and several related phenomena, including earthquakes, volcanism, continental drift and sea-floor spreading.

Free parking is available on the east side of Loomis in Lot B-21. For more information, contact Toni Pitts, 217-333-4183.

The full fall schedule is available online at physics.illinois.edu/outreach/saturdayphysics/.

Thursdays @ 12:20 concert series

Saxophone and cello quartet to perform

The Beckman Institute’s Thursdays @ 12:20 concert series features performances by members of the U. of I. School of Music. The Graduate Saxophone Quartet will perform Nov. 13, and the Illini Cello Quartet will perform Nov. 20. Performances are in the Beckman Institute atrium and run from 12:20 to 12:50 p.m. They are free and open to the public. Metered parking is available outside the east entrance.

The Beckman Institute Café is open for lunch during the concerts and features a variety of beverages, entrées, salads and desserts.

U. of I. Police Department

“No-Shave” to raise money, awareness

U. of I. police officers hope to raise money and awareness for men’s health issues as they let their hair down, or rather their beards grow, during No-Shave November.

Officers have been granted permission to grow beards as part of the national campaign to increase cancer awareness originally started by the American Cancer Society.

Any officer who wants to participate must donate at least $20 to charity. The effort is not just for sworn police officers of the U. of I. Police Department. All members of the Division of Public Safety have been invited to participate. The department plans to spread the word throughout the month through social media.

“As public servants, we are asked very often to help raise money for quite a few worthy causes, but this is something we have been looking forward to,” said Officer Jason Bradley. “Men all over the country get to participate in ‘No Shave November,’ but we were left out until this year.”

For the other 11 months of the year, police officers must adhere to strict appearance guidelines, which means no beards or goatees. While U. of I. police officers have been granted a little leniency for November, they will keep their temporary facial hair groomed and in good taste.

Center for Innovation in Teaching and Learning

Online courses offered Dec. 22-Jan. 16

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Experts help animal exhibitors prepare for the worst

By Diana Yates
Life Sciences Editor

Here are three disaster scenarios for zoo or aquarium managers: One, a wildfire lunges toward your facility, threatening your staff and hundreds of zoo animals. Two, hurricane floodwaters pour into your basement, where more than 10,000 exotic fish and marine mammals live in giant tanks. Three, local poultry farmers report avian influenza (bird flu) in their chickens, a primary source of protein for your big cats.

What do you do?

These are among the many potential disasters the managers of zoos and aquariums ponder in their emergency preparedness drills and plans. But these stories are not just worst-case scenarios. The events described above actually happened, and the aftermath — often heroic, and sometimes tragic — depended in large part on the institutions’ preparedness training, planning and forethought in calmer times.

When bad weather strikes or illness invades, zoos and aquariums are among the most vulnerable facilities affected, said U. of I. veterinarian Yvette Johnson-Walker, a clinical epidemiologist who contributes to emergency response training efforts at animal exhibitor institutions. She is a clinical instructor in the department of veterinary clinical medicine at Illinois, and the lead author of a new paper on emergency preparedness at zoos and aquariums in the journal Homeland Security & Emergency Management.

Some animals are likely to suffer if the electricity goes out for long, she said. Others are large, skittish and dangerous under normal conditions.

Training caretakers and keepers to minimize their own risks while attending to their animals in an emergency is a challenge, but leads to the best outcomes, she said.

In 2012, Johnson-Walker joined forces with Yvonne Nadler, a project manager with the Zoo and Aquarium All Hazards Preparedness Response and Recovery Center, to bring vital emergency training to accredited animal exhibitor institutions in Illinois, Indiana and Missouri. This effort, funded by the U.S. Department of Agriculture and supported by the Association of Zoos and Aquariums, has since expanded, providing training to staff members from zoos and aquariums in 23 states.

The trainings, dubbed “Flu at the Zoo,” focus on avian influenza, a viral disease that spread in the 2000s among wild and captive birds and also infected hundreds of people, primarily in Asia, Africa and the Middle East. Bird flu serves as a useful model scenario to help train participants in basic preparedness skills.

“One such skill is familiarity with the Incident Command System (ICS), a framework developed by firefighters and adopted by the Federal Emergency Management Agency (FEMA) that allows first responders to quickly set up their emergency response organizations with the right people in the right places.”

Johnson-Walker explained that the ICS has long been used by public safety, law enforcement and public health entities involved in emergency response.

“We wanted zoos and aquariums to have a seat at the table when there’s planning for how we’re going to respond to emergencies, and to be able to fit into the system, know who to talk to and how to communicate,” Johnson-Walker said.

It’s also important to recognize the other responders and understand their roles, she said. If the event involves a disease like bird flu, the USDA, FEMA, National Institutes of Health, state veterinarian, state and federal wildlife services, public health authorities, veterinary organizations, police, hospitals and perhaps even local poultry operations will be involved in the response. Knowing who does what can speed communication in a crisis.

Planning also helps managers make best use of the limited supplies or equipment they have on hand, Nadler said.

“There are certain types of livestock trailers, for example, that can be adapted to moving big cats,” she said. “Is that your preferred method of movement? Of course it isn’t, but in an emergency that might be your only option.”

One beneficiary of the emergency training, Melinda Arnold, knows firsthand the value of preparedness. Arnold is the public relations director for Friends of the Zoo, affiliated with Dickerson Park Zoo in Springfield, Missouri. The zoo suffered a blackout during a 2007 ice storm that shut off power for most of the city for several days.

“We did have backup generators,” Arnold said. “The greatest problem with the generators was that those fueling stations in town that did have gas didn’t have power, so they couldn’t pump the gas.”

Zoo staff had to travel many miles outside the affected area with gas cans to collect gas to run the backup generators, she said.

“When we have some propane-powered backups,” Arnold said. “A more recent incident at the zoo, the accidental death of a zookeeper in 2013, caused Dickerson Park Zoo officials to re-evaluate all of their safety protocols. Even though the zookeeper had decades of experience and was guarded by a protective barrier, a skittish elephant rushed him at an unguarded moment, and he fell and was trampled to death.

“That made us step back, not only in our elephant management but in all areas of the zoo, and look at our safety procedures and points of contact with dangerous animals and evaluate those safety conditions and make improvements,” Arnold said.

The preparedness plans, drills, discussions and training all help zoos and aquariums reassess their procedures, even those that seem to be safe after decades of operations and no major incidents, she said.

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