Bullied teens often are assured that nothing can be done about their situation. “They’re told to ‘just grin and bear it.’” And a new study suggests that bullying does, indeed, tend to decline as teens progress through high school and move toward adulthood.

However, boys who identify as gay or bisexual report significantly higher rates of bullying than do boys who identify as heterosexual. In fact, leaving high school, higher even than heterosexual boys who reported nearly identical rates of victimization during childhood.

The study, in the Feb. 4 edition of the journal Pediatrics, examined development trends in bullying and emotional distress among British teens over several years. The researchers found that bullying peaked for all youth, regardless of gender or sexual orientation, when participants were 13 or 14 and significantly declined over time.

At age 13-14, the first years of the study, 57 percent of lesbian/bisexual girls and 52 percent of gay/bisexual boys reported being bullied. By age 19-20, just 6 percent of girls and 9 percent of boys reported peer victimization.

While both heterosexual and gay/bisexual boys experienced drops in victimization after high school, gay/bisexual girls were bullied far more often than their heterosexual peers after leaving school.

“If you’re looking at absolute levels of bullying, then yes, it does get better for most. But, ‘better’ said Joseph P. Robinson, an educational psychologist in the College of Education at the U. of I. and the lead author of the study. “But then if we look at relative rates of bullying, comparing LGB youth to heterosexual youth, then the answer gets a little more complicated. It suggests it gets better only for lesbian/bisexual males over time, but relative terms it gets worse for gay/bisexual males. It’s important to keep in mind that bullying rates decline for gay and bisexual boys, but they decline to very low levels for straight males around age 18.”

Although lesbian or bisexual girls were about twice as likely as heterosexual females to be bullied throughout high school, the rates of victimization for both groups of girls were comparable after leaving school.

“It’s an interesting pattern,” Robinson said. “The data suggest that during high school, what mattered more for whether students were bullied or not was not how LGB-identified girls were bullied but what was bullying to heterosexual girls. "Then after high school what mattered more was the interaction between gender and sexual identity. That is, for girls, sexual identity didn’t matter – straight-identified girls were bullied as often as lesbian- or bisexual-identified girls, on average. But for boys, sexual identity seemed to matter quite a bit, such that gay- and bisexual-identified boys were bullied far more often than straight-identified boys.”

The study is believed to be the first longitudinal study to explore rates of peer victimization and emotional distress among gay/bisexual youth. Robinson and his co-authors used data from the Longitudinal Study of Young People in England, an annual study conducted by the Department for Education in the United Kingdom from 2004-2010.

Data collection included interviews with the youth every year as well as with their parents and school administrators during the first four years. Students were 13-14 years old when the study began and 19-20 years of age when it concluded.

Under the British education system, compulsory schooling typically ends when students are 15-16 years old. To reduce the possibility of differential race-, or ethnicity-based bullying, the researchers restricted their sample to 4,135 youth who identified as “white-British” and participants who responded to the victimization questions every year.

A total of 187 participants – or 4.5 percent - identified as lesbian, gay or bisexual for the first four years of the study, when students ranged in age from 13-17, in 2004-2010.

Research: Males’ superior spatial ability likely is not an evolutionary adaptation

By Diana Yates  
Life Sciences Editor

Males and females differ in a lot of traits (besides the obvious sexualities) and some evolutionary psychologists have proposed hypotheses to explain why. Some, for example, that males’ slight, but significant, superiority in spatial navigation over females – a phenomenon demonstrated repeatedly in many species, including humans – is probably “adaptive,” meaning that over the course of evolutionary history the trait gave males an advantage that allowed them to have more offspring than their peers.

A new analysis published in The Quarterly Review of Biology found no support for this hypothesis. The researchers, led by U. of I. psychology professor Justin Rhodes, looked at 35 studies that included data about the territorial ranges and spatial abilities of 11 species of animals: cuttlefish, deer mice, horses, humans, laboratory mice, meadow voles, pine voles, prairie voles, rats, rheas, macaques and tulas (a type of burrowing rodent). Rhodes and his colleagues found that in more than 11 species, males demonstrated moderately superior spatial skills to their female counterparts, regardless of the size of their territories or the extent to which males ranged farther than females of the same species.

The findings lend support to an often-overlooked hypothesis, Rhodes said. The average superiority of males over females in spatial navigation may just be a “side effect” of testosterone, he said. (Previous studies have shown that women who take testosterone tend to see an improvement in Stene NAVIGATORS, PAGE 7)

Spatial navigation  
U. of I. psychology professor Justin Rhodes and his colleagues found evidence contradicting a popular hypothesis suggesting male spatial superiority is a result of natural selection. In spatial navigation may just be a “side effect” of testosterone, he said. (Previous studies have shown that women who take testosterone tend to see an improvement in Stene NAVIGATORS, PAGE 7)

UC-Berkeley chancellor up next in speaker series

By Mike Helenthal  
Assistant Editor

If anyone is capable of understanding the challenges confronting the U. of I., it’s Robert Birgeneau, the chancellor of the University of California at Berkeley.

Birgeneau, who retires in June to continue his acclaimed physics research and lead the Lincoln Project, a national discussion on higher education funding, will speak on the Urbana campus March 6 as part of Chancellor Phyllis M. Wise’s ongoing “Research University in the World of the Future” speaker series. His talk will be at 3 p.m. in Spurlock Museum’s Knight Auditorium.

When Birgeneau took over as chancellor at UC-Berkeley nine years ago, the California economy was humming, the state was providing about 30 percent of the funding for Berkeley, said the chancellor of the University of California at Berkeley.

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By Mike Helenthal
Assistant Editor

SEC: Survey to gauge strength of shared governance

If you could measure which words have been uttered most in the past few years on the U. of I. campus, “shared governance” would rank at the top.

But beyond the high ideals attributed to it, the myriad conversations about it and the challenges to its existence past and present, is the current state of campus shared governance as strong as it should be?

State Executive Committee leaders at their Feb. 11 meeting discussed answering that question with a proposed online campus faculty survey designed to measure shared governance, including faculty opinions on the campus level, and the chair of the General University Policy Committee. “I don’t know if it’s ever been done.”

Questions on the survey, answered anonymously, would ask about local-level administrative behavior, and local administrators is effective and acceptable respectively.

Burblees said the survey idea arose after some committee members had expressed concerns that shared governance on campus is “not as strong at the unit level as it is at the campus level.” It is still undecided which senate committee officially would sponsor the survey, and Burblees said his committee will continue to hash out issues so it can move forward and present a final recommendation to the SEC at an upcoming meeting.

One reason the survey could be used to consider “corrective mechanisms” for any newly discovered governance problems. Since the names of respondents and phone numbers are not included in the survey, said that anonymity could empower anyone who is in a situation where their concerns are not being followed to report problems.

Sen. John Kindt, an emeritus professor of business administration and chairman of the benefits committee, said the high number of new faculty members makes re-emphasizing shared governance tenets as important as ever. He said some faculty members may not even be aware that colleges are required to follow their own established bylaws.

Burbules said a few (faculty members) who are unaware there are these bylaws, Kindt said.

Burblees said even some longtime faculty members were less aware of the rules than they should be.

“The bylaws might exist, but that’s a variable term,” he said, noting senators should continually communicate the importance of following established guidelines to constituents.

In other business:
• Senators discussed broadening the charge of the Educational Policy Committee on the impact on other programs.
• Sen. Gay Miller, a professor of pathology and the committee chair, said the broader conversation “start” during the approval process for the College of Engineering’s new professional master’s program.

The process recent revealed that expanding engineering’s programs would affect business and math course enrollment — leading to capacity pressures and no new resources to address them.

“We thought we would benefit from a larger campus discussion of these issues,” she said.

While no official campus policy exists to address the impact of new sites by program, Sen. Abbas Aminiannour, a professor of architecture, said that traditionally, these problems have been avoided because the creators of the program sought consent from the affected program.

He said if that method failed, the next step has been seeking resolution in the Office of the President.

Burblees said ongoing discussion of the issue should also consider technology’s impact on new and existing programs.

• Ben Call, a professor of chemistry and the chair of the Campus Operations Committee, said the committee has been discussing changing senate bylaws to add campus sustainability to its list of oversight responsibilities.

He said committee members had discussed the idea in the context of the Illinois Climate Action Plan, formulated after Illinois signed on to the American Colleges and Universities Presidents’ Climate Commit- mitment initiative in 2008. The agreement sets emissions and energy reduction goals for member campuses through 2050.

“A large fraction of putting (iCAP) into action involves campus operations,” McCall said.

Any proposed changes in the bylaws that alter committee responsibilities would first go to the appropriate Committee Procedures Committee and then to the senate for a vote.

Official campus ‘Unofficial’ message: Business as usual

Mike Helenthal
Assistant Editor

“If you can keep your head when all about you are losing theirs … yours is the Earth and everything’s in that.”

That’s the Rodyard Kipling-inspired message that the Student Government Association has adopted for the day of Unofficial. The students involved in the event, that this year on March 1 will bring thousands of visitors to Campustown and its environs.

Campus leaders say they have gone to great lengths to ensure that the day ofUnofficial will be on hand to assist.

Police in the event of classroom disruption. Visitors to Campustown and its environs.

“One of the most disheartening aspects of this event is that it can be a drain on the Quad and will work in close contact with U. of I. Police in the event of classroom disruption. Some federal and state police agencies as well will on hand.

“We make sure that our volunteers can easily reach out to authorities, and authori- ties are ready and waiting for those calls,” she said. “The volunteers know not to be shy about calling the police for support.”

Students have been advised of applicable laws – pertaining to behavior on cam- pus and off – and their response to maintain composure in all settings during Unofficial. Visitor restrictions again will be in place in all residence halls.

Despite all of the attention on classroom behavior, Kaler said arrest statistics show the largest percentage of those causing trouble – as many as 70 percent – come from out of town. At least two incidents in the event’s history have led to deaths.

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Two professors elected to National Academy of Engineering

By Liz Ahlberg

Weng Cho Chew and Thomas J. Overbye, both professors of electrical and computer engineering at the U. of I., have been elected to membership in the National Academy of Engineering.

Chew and Overbye are among 69 new members and 11 foreign associates announced by the academy Feb. 7. Election to the NAE is one of the highest professional honors an engineer can garner. The 2,250 members and 211 foreign associates are an elite group distinguished by their outstanding contributions to the fields of technology and engineering.

“Having two Illinois faculty members inducted into the NAE in the same year is truly an outstanding accomplishment for our institution, the College of Engineering and the department of electrical and computer engineering,” said Ilesanmi Adesida, the provost and vice chancellor for academic affairs of the Urbana campus. “Both Weng Chew and Tom Overbye are groundbreaking and innovative researchers whose work exemplifies the excellence that characterizes Illinois. I am proud to know them as colleagues, and today is another great day to be a part of the Illinois campus.”

Chew was cited for his contributions to large-scale computational electromagneticics of complex structures. He is an expert in the field of electromagnetic scattering – the way that light, radio wave and microwave and their energy diffruse as they pass through or reflect off a medium. While some scattering data can be useful, such as with radar, remote sensing or X-rays, some scattering causes interference to signals, as in a computer chip. Chew works to develop fast and efficient computational algorithms to address scattering problems at different length scales.

Chew earned his Ph.D. in electrical engineering at the Massachusetts Institute of Technology in 1980. He joined the faculty at Illinois in 1985. He is a fellow of the Institute of Physics, the Optical Society of America, the Institute of Electrical and Electronics Engineers and the Electromagnetic Academy. He also is affiliated with the department of computer science at the U. of I.

Overbye, the Fox Family Professor in electrical and computer engineering, was cited for his work on visualization and analysis tools for power systems. His research focuses on the infrastructure of the power grid, including visualizing power system information, optimizing power distribution, integrating renewable energy sources such as wind and solar into the power grid, and power grid cybersecurity. Overbye developed the Pow erWorld Simulator, an innovative computer program for power system analysis and visualization.

Overbye earned his bachelor’s, master’s and doctoral degrees in electrical engineering at the University of Wisconsin at Madison before joining the faculty at Illinois in 1991. He was a member of the U.S. Department of Energy’s investigation team for the Aug. 14, 2003, blackout. Overbye also is affiliated with the Information Trust Institute at the U. of I.
By Diana Yates
LIFE SCIENCES EDITOR

Scientists have long sought to understand how one of these players, a repair protein known as RecA in bacterial cells, helps broken DNA find a way to bridge the gap. They knew that RecA guided a broken DNA strand to a matching sequence on an adjoining bit of double-stranded DNA, but they didn’t know how. In a new study, researchers report they have identified how the RecA protein does its job.

“The puzzle for scientists has been: How does the damaged DNA look for and find its partner, the matching DNA, so that it can repair itself?” said U. of I. physics professor Taekjip Ha, who led the study. “Because the genomic DNA is billions of bases long, this task is much like finding a needle in a haystack. We found the answer to how the cell does this so quickly.”

The research is described in a paper in eLife, a new open-access journal supported by the Howard Hughes Medical Institute (HHMI), the Max Planck Society and the Wellcome Trust. Ha is anHHMI investigator. The National Science Foundation provided primary funding for this work.

DNA repair is vital to health, vitality and longevity. Disruptions of the process can lead to the early onset of diseases associated with aging or cancer in animals. The breast cancer mutation known as BRCA2, for example, disrupts a gene involved in loading Rad51 (the human equivalent of RecA) onto a broken DNA strand to begin the process of repair.

Previous studies have shown that in bacteria, RecA forms a filament that winds itself around a broken, single-strand DNA. Like a matchmaker trying to find a partner for an unpaid dancer, it scours the corresponding DNA strands for a sequence that will pair up perfectly with the broken strand. Once it finds the sequence, the broken strand steps in and chemically bonds to its new partner, displacing one of the unbroken strands (which eventually pairs with the other broken strand). This elaborate molecular square dance allows the cell to go back to the work of duplicating its genome. Each broken strand now is paired with an unbroken one, and uses the intact strand as a template for replication.

“If a break in DNA occurs, you have to repair it,” Ha said. “We wanted to know how RecA helps the DNA find a sequence complementary to it in the sea of genomic DNA, and how it does it so quickly.”

To answer this question, the researchers made use of fluorescence resonance energy transfer (FRET) to observe in real time the interaction of the RecA protein and the DNA. FRET uses fluorescent molecules whose signals vary in intensity depending on their proximity to one another. By labeling a single DNA strand bound by RecA and putting a different fluorescent label on a stretch of double-stranded DNA, the researchers could see how the molecules interacted with one another.

The team determined that RecA that is bound to a single-stranded DNA molecule actually slides back and forth along the double-stranded DNA molecule searching for a match.

“We discovered that this RecA filament can slide on double-stranded DNA for a span of sequences covering about 200 base pairs of DNA,” Ha said. “This is how one strand of DNA can be exchanged with another from a different DNA duplex. That’s the process called ‘recombination.’”

The discovery explains how DNA repair can occur so quickly, Ha said.

“We did a calculation that found that without this kind of process that we discovered, our DNA repair would be 200 times slower,” he said. “So your DNA would not be repaired quickly and damage would accumulate, possibly leading to serious diseases.”

The research team included graduate students Kaushik Ragunathan and Cheng Liu. Ha is an affiliate of the Institute for Genomic Biology and a co-director of the NSF Center for the Physics of Living Cells at Illinois.

By Chelsey B. Coombs
NEWS BUREAU INTERN

It has been almost 20 years since the first genetically modified crops, now known as GMOs, were approved for sale in the United States and the rest of the world, but controversy continues to surround the products and their regulation.

Bruce Chassy, a professor emeritus of food science and human nutrition at the U. of I., believes that after thousands of research studies and worldwide planting, “genetically modified foods pose no special risks to consumers or the environment” and are overregulated.

Chassy elaborated on this conclusion at the 2013 meeting of the American Association for the Advancement of Science in Boston on Feb. 17. During his talk, “Regulating the Safety of Foods and Feeds Derived From Genetically Modified Crops,” Chassy shared his view that the overregulation of GM crops actually hurts the environment, reduces global health and burdens the consumer.

Farmers have witnessed the advantages of GM crops firsthand through increases in their yields and profit, and decreases in their labor, energy consumption, pesticide use and greenhouse gas emissions, Chassy said. Despite these benefits, various regulatory agencies require newly developed GM crops to be put to the test with rigorous safety evaluations that include molecular characterization, toxicological evaluation, allergenicity assessments, compositional analysis and feeding studies. This extensive testing takes five to 10 years and costs tens of millions of dollars, and Chassy argues that this process “wastes resources and diverts attention from real food safety issues.”

“With more than half of the world’s population now living in countries that have adopted GM crops, it might be appropriate to reduce the regulatory scrutiny of GM crops to a level that is commensurate with science-based risk assessment,” Chassy said.

During his talk, Chassy chronicled the scientific tests used in pre-market safety assessments of GM foods and elaborated on the evidence from thousands of research studies and expansive GM plantings that he says show these crops do not present risks to consumers or the environment. The overregulation of GM foods is a response not to scientific evidence, Chassy said, but to a global campaign that disseminates misinformation and fear about these food sources.

Food safety
The overregulation of genetically modified crops is a response not to scientific evidence, but to a global campaign that disseminates misinformation and fear about these food sources, food scientist Bruce Chassy said at the American Association for the Advancement of Science meeting.

Team solves mystery associated with DNA repair

DNA repair

U. of I. expert: Genetically modified crops are overregulated
Three awarded Sloan Fellowships

By Diana Yates

Life Sciences Editor

Three U. of I. professors have been selected to receive 2013 Sloan Research Fellowships from the Alfred P. Sloan Foundation.

Computer science professors Derek Hoiem and Svetlana Lazebnik, and physics professor Taylor Hughes are among 126 early career scientists and researchers from 50 colleges and universities chosen for a two-year fellowship. In keeping with its goal of recognizing potential groundbreaking researchers in their respective fields, the Sloan fellowship program awards fellows $50,000 to pursue their choice of research topics and allows them flexibility in applying funds toward their research.

Hoiem studies general visual scene understanding, the ability to interpret scenes from visual data in a way that enhances the ability to manipulate or organize.

“I want to think of vision in terms of real-world space, surfaces, objects and relations, and to develop frameworks that allow visual knowledge to be accumulated, so that each task contributes to a world view that makes learning easier,” he wrote in a research statement.

He co-wrote a book about computer vision, “Representations and Techniques for 3-D Object Recognition & Scene Interpretation,” which explains the newest advances in 3-D scene understanding to newcomers to the field. He also is the recipient of a 2011 NSF CAREER Award and a 2012 Intel Early Career Faculty Award for his work in computer vision.

Hoiem earned his doctorate in robotics from Carnegie Mellon University in 2007. He was a postdoctoral fellow at the Beckman Institute for Advanced Science and Technology from 2007-2011, and joined the U. of I. faculty in 2009.

Hughes is interested in condensed matter systems, working with materials such as superconductors, topological insulators and graphene. In recent work he has used quantum entanglement to characterize exotic phases of matter. For example, recent research explored topological insulators – materials that conduct electricity only on their surface, and with very little energy dissipation – using quantum entanglement to describe the quantum properties of these materials. He also looks at the increasing role that quantum effects play in nanotechnology devices.

Hughes earned his doctorate in physics from Stanford University in 2009. He came to the U. of I. as a postdoctoral researcher in physics professor Eduardo Fradkin’s group. Hughes joined the faculty in 2011.

Lazebnik’s interests are in computer vision and visual recognition. Her research is directed at discovering the collective structure of large-scale Internet photo collections to create compact and scalable representations for accessing their content. Her work has yielded advances in several areas, from fast techniques for fundamental operations such as similarity search, to efficient methods for organizing photo collections based on perceptual and geometric constraints; to high-level systems capable of interpreting images in terms of their constituent objects, parts and materials. She is the recipient of an NSF CAREER Award and a Microsoft Research Faculty Fellowship.

Lazebnik earned her Ph.D. at the U. of I. in 2006. She was an assistant professor in the department of computer science at the University of North Carolina at Chapel Hill from 2007 to 2011, and joined the U. of I. faculty in 2012.

Sloan Research Fellowships have been awarded since 1955.

June M. Anderson, 89, died Feb. 9 at Bickford Cottage in Champaign. Anderson was a typing clerk II with the department of student accounts and cashiering from 1980-1992. Memorials: Champaign County Humane Society, cuhumanes.org.

Felice Davidson Bateman, 90, died Feb. 4 at Carle Foundation Hospital, Urbana. She was a professor of mathematics for 23 years, retiring in 1989. Memorials: Paul T. Bateman Fellowship Fund, c/o U. of I. Foundation, www.giving.illinois.edu.

James Edward Hull, 92, died Feb. 6 at Heartland Health Care Center, Champaign. He was an assistant instrument engineer for the Division of Operation and Maintenance (now Facilities and Services), retiring in 1986. Memorials: VFW Post No. 5520, 609 Edgebrook Drive, Champaign, IL 61820, or the Alzheimer’s Association, alz.org.

Karen L. Kruse, 69, died Feb. 7 at Carle Foundation Hospital, Urbana. Kruse worked for UI Extension for nine years, retiring in 1998.

David Lloyd, 92, died at Calvary Hospital in New York City on Feb. 8. Lloyd was a professor of music for 15 years, retiring in 1986.


Jason Nicholas Rogers, 32, died Feb. 8 at Provena Covenant Medical Center, Urbana. Rogers worked at the U. of I. Institute of Aviation as an assistant aviation education specialist from 2003-2008. Memorials: An account has been set up for the family at South Side Bank, 917 N. Fourth St., Chillicothe, IL 61523.
Our laws and debase the welfare of nations, but not in the greater context in which they may differ in time and location. Millions of people unlawfully reside in the midst of 285 million birthright citizens, who are essentially refusing to view the complaint as an occasion to enforce immigration laws. Instead, they have invoked basic remedial principles, such as restitutions and prevention of unjust enrichment.

In a ruling from 2002, the Supreme Court invited lower courts to bifurcate remedies, so that unlawful aliens would receive little or no legal protection, LeRoy said. “But for the most part, lower courts have declined to view the filing of a complaint as an occasion to enforce immigration laws. Instead, they have invoked basic remedial principles, such as restitutions and prevention of unjust enrichment.”

Some compare the actions of the lower courts as similar to honoring the biblical injunction from Deuteronomy 25:17, “When someone buys stolen identification.” LeRoy said. “Don’t care if the devil performed the work.” In other words, the law says that the employer pays no matter what.

In other cases, the courts ap- proved the doctrine of “unclean hands,” referring to the unlawful behavior of employers in failing to verify immigration status, or knowingly hiring illegal immigrants. Depending on the law, the plaintiffs won between 53.3 and 77.5 percent of the time. Only 5 percent of the rulings mirrored the outcome in the Hoff- man Plastic Compounds case, where courts found a violation of an employment law but denied a monetary award because of the unlawful status of the plaintiff.

“Knowingingly employing illegal aliens creates a cost-free way for employers to gain access to their workplace where people get injured and the insurance rates don’t go up,” LeRoy said. “Someone gets injured – you curtail them off, turn them over to immigration and report them as deportable aliens, then hire the next batch of illeg- al aliens and go on from there. This is what a lot of lower courts were worried about – that it enables employers to violate the law without consequences, and thus encourages the hiring of unlawful aliens. It’s also what the four dissenting Supreme Court justices in the Hoffman case were worried about.”

Since it’s never the same set of circumstances, sometimes, the employer violated immigr- ation law; sometimes, neither the employer nor employee complied with the immigration law, and occa- sionally, an employee not only lied but stole someone’s identity – judicial experience shows that a case-by-case approach is prefera- ble to a one-size-fits-all approach, LeRoy says.

“More cases you read, the more you’re struck by how varied they are,” he said. LeRoy says the database of cases also had individuals who came through a legal mechanism – “We keep thinking of unlaw- ful aliens as people who illegally cross the border,” he said. “But sometimes, we need to look at the fact that those who have fled for highly skilled positions in engineering and information technol- ogies, those who come from those fields, and in the labor market and can’t find them and what’s I’m going to pay you that amount.” So it was that employer that converted a legal relationship into an illegal one, and that’s a very different from a case where someone uses stolen identifica- tion on the black market but then becomes paralyzed at work in an accident.

LeRoy says the best course is for courts “figure it out for themselves, because the statutes and regulations are so varied, the circum- stances are different, and the level of legality is very different in each case,” he said.

This research also is relevant to current proposals for comprehen- sive reform of immigration laws, LeRoy says. “The proposal by the ‘Gang of Eight’ senators is to make for a system that’s very different from a system where someone uses stolen identification and is working in the black market but then becomes paralyzed at work in an accident.”

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The Lincoln Project, so-named for its Morrill Act land-grant inspiration that education should be accessible to all and serve the public good, was created by the American Academy of Arts and Sciences “to engage state and federal policymakers, elected officials, university and business leaders, philanthropists, learned societies, and the broad public.” Wise is a member of the project’s steering committee.

Birgeneau said he hopes the process leads to the discovery of common-sense approaches that can be adopted to help all of higher education adapt to the changing times.

While Birgeneau said his experience leaves him with much to contribute to the conversation about the future of higher education, he too continues to seek answers. He said he hopes to use the talk on the Urbana campus as a sounding board of sorts as he prepares to lead the Lincoln Project. “I’ll welcome any and all ideas that anyone has,” he said of his visit.

As for his new employment arrangement, he’ll volunteer a week each month for the Lincoln project and devote the balance of his time to his research on superconductors. As chancellor, he laments only being able to work on his research on weekends. “I’ve been able to keep a reasonable level of research going and actually have had a lot of interactions with colleagues at (Illinois),” he said.

Prior to Berkeley, Birgeneau served four years as president of the University of Toronto. Before that he was on the faculty at the Massachusetts Institute of Technology for 25 years, where he was named dean of the School of Science. A Toronto native, he earned his bachelor’s degree from the University of Toronto and his PhD at Yale University in 1966. He was a member of the technical staff at Bell Laboratories from 1966-1975, joining the MIT physics faculty in 1975.

Birgeneau said he’s tried to apply the critical thinking of his chosen field to the problems facing higher education — and after nearly a decade at the helm of Berkeley, he said he’s incapable of ignoring the struggles of universities, looking at the opportunity to resolve them as a higher-education calling. “I’m a physicist who works on complex systems — this is what I know and do,” he said.

InsideIllinois
Feb. 21, 2013

Prepared by Scieix Inc., Urbana, Ill., in cooperation with the University of Illinois

ON THE WEB
www.oc.illinois.edu/visioning/series.html

BIRGENEAU, CONTINUED FROM PAGE 1

for its 10-university system, and the governor was promising more.

Since then, state funds have trickled to 11 percent, the university has found about $80 million in annual savings through an internal administrative review process called “Operational Excellence,” and voters, legislators and students are still demanding a better return on their investment.

Sound a little familiar?

“No responsible leader can assume that the state is magically going to see the light and reinstate funding,” he said. “The single most important thing we understood was that changes were happening and we needed to address them.”

Birgeneau has led several successful strategies that have not only kept the university afloat, but performing at a premier level. Strategies included the aforementioned administrative review, increased fundraising activity and a greater focus on developing corporate partnerships.

“It's been a dramatic change and we’ve had to do a lot simultaneously,” he said. “It hasn’t been easy to navigate – it’s very similar to what the U. of I. has experienced.”

Birgeneau said leaders of higher education must come to terms with the fact that government support may never return to 20th-century levels. And once the concept of “disinvestment” is accepted, they must then plot a sound course, follow it without fear and create a funding model to support it.

“Public universities have to decide what their missions are,” he said.

And even in times of change and constrained budgets, he said higher education cannot abandon its commitment to underrepresented students.

“There are pressures all the time to compete and it seems the most vulnerable are the first sacrificed” during times of austerity, he said.

Helping qualified students who have been shut out of higher education because of financial or minority status is an ideal he said UC-Berkeley has fiercely adhered to. Even in the current climate, the university has been able to lock in guaranteed four-year tuition rates for freshmen and increased assistance to low-income and middle class students.

“Those areas are part of the challenge and we’ve made a lot of progress there,” he said.

Birgeneau considers the times he’s faced in his tenure at Berkeley unprecedented, but not unique, which is why he was so eager to volunteer to lead the Lincoln Project when he steps down as chancellor.

The only way you will get a sex difference is in one sex, the other sex will get it because it’s inheriting the same genes – unless it’s begun for that sex.”

Similarly, scientists who claim that the different spatial skills in men and women are adaptive must explain why women failed to inherit the superior spatial skills of their navigationally enhanced fathers, Rhodes said.

“The only way you will get a sex difference (in an adaptive trait) is where a trait is good for one sex and bad for the other,” he said. “But how is navigation bad for women? This is a flaw in the logic.”

“When people hear arguments made or stories told, particularly about human behaviors being products of adaptation, I think they should ask the question: ‘Where is the evidence?’” Rhodes said.

Rhodes is an affiliate of the Beckman Institute for Advanced Science and Technology at Illinois.

The research team also included a philosopher from the University of Wisconsin at Madison and a scientist from the University of California at Riverside.
By Dusty Rhodes
Arts and Humanities Editor

Behavioral problems among teenagers and preteens can be blamed on the violence, sex and gore portrayed in the media marketed to them — that was the topic of televised public hearings held by the U.S. Senate Subcommittee on Juvenile Delinquency in 1954 to address the scourge of comic books.

The hearings, which resulted in the decimation of what was an enormous comic book industry, had been initiated a few months earlier, when the U.S. Army, among other factors, had begun creating new storylines designed to appeal to young men returning from World War II. With no rating system, and with a well-established tradition of trading, comic books depicting crime, violence and sex were readily available to youngsters, much to the dismay of some adults.

“Women’s groups, teachers’ groups — all sorts of civic and professional organizations — were lobbying against comics,” Tilley said. “Everybody from juvenile judges to pharmacists to the national PTA — they all felt that comics had become debauched and were leading kids to lives of ruin and depravity.”

“Sometimes I read them over and over again. It could be that Batman did something with Robin like I did with the younger boy.”

For example, in “Seduction,” Wertham links “Batman” comic books to the case of a 13-year-old boy on probation and receiving repair and maintenance. “He had an extensive case file the boy preferred Superman, “Crime Does Not Pay” and “war comics” over “Batman,” and that according to Wertham’s files and comparing him closely to his book. “That’s hard to overlook.”

“Many other homono-erotically inclined children, he was a special devotee of Batman: ‘Sometimes I read them over and over again. It could be that Batman did something with Robin like I did with the younger boy.’ ”

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Sewage lagoons remove most – but not all – pharmaceuticals

By Chelsey E. Coombs
Novice Bureau Intern

Last year marked the 40th anniversary of the Clean Water Act, which charged pollutants to waterways and supported the building of sewage treatment plants. Despite these advances, sewage remains a major source of pharmaceuticals and personal care products (PPCPs) and naturally occurring hormones found in the environment.

Many rural communities in the United States use aerated lagoon systems to treat their wastewater. The wastewater is pumped into a series of lagoons, which are aerated and allowed to settle before being discharged into a nearby water body.

In a new study led by Wei Zheng, a U. of I. professor in the department of natural resources and environmental sciences and a senior research scientist at the Illinois Sustainable Technology Center, researchers determined the effectiveness of rural sewage lagoon systems at removing these compounds from wastewater.

The research was conducted jointly with the Illinois State Water Survey and supported the building of sewage treatment lagoons is relatively high, this study shows that there is a significant increase in the occurrence of PPCPs in surrounding watersheds with the effluent discharge, which could change the rural aquatic environment.

Some compounds are easy to degrade and remove using this lagoon treatment system, but some compounds are persistent,” Zheng said. “When these persistent compounds are introduced into the environment through effluent discharge, they may contaminate water sources and affect the aquatic ecosystem.

The people eventually consume this water, the presence of PPCPs and steroid hormones is a concern, Zheng said.

“Pharmaceutical residues are usually detected in the aquatic environment at very low concentrations, below their therapeutic doses employed for medical purposes,” he said. “There is concern about the long-term exposure to these emerging contaminants in water supplies may jeopardize human and aquatic habitat health.”

The research also is useful for addressing the potential risks of using rural sewage effluent for crop irrigation, especially as the occurrence of droughts increases, Zheng said.

More research needs to be conducted to understand the environmental fate and negative effects of PPCPs and hormone contaminants, but for now, Zheng is happy that the information he and his team found will benefit rural communities to properly utilize lagoon treatment systems to handle their wastewater and help state and federal environmental protection agencies for controlling PPCP management strategies for controlling PPCP and hormone contaminants released from sewage effluents, so our information can help the EPA develop the best management strategies and regulations to mitigate the loading of these emerging contaminants into the environment and promote the safe and beneficial reuse of treated wastewater in U.S. agriculture.

The Illinois Sustainable Technology Center is part of the Prairie Research Institute at the U. of I.

BULLYING. CONTINUED FROM PAGE 1

they try to avoid situations they experienced specific forms of bullying – name calling, threats of physical violence or actual physical violence – during the prior year.

During the final two years, when students would have been out of school under the British system, they were asked whether they experienced any form of bullying/victimization but were not asked to specify which type(s).

The researchers used a propensity-score-matching technique to identify samples of heterosexual boys and girls and LGB boys and girls with nearly identical victimization and emotional distress profiles in years one through four of the study. Then, using the matched sample, the researchers examined differences in postsecondary/post-high school victimization rates.

In addition to questions about bullying, teens were asked at ages 14-15 and 16-17 about their emotional states, specifically if they recently had been feeling unhappy and depressed, thinking of themselves as a worthless person or feeling reasonably happy all things considered.

LGB youth demonstrated significantly higher levels of emotional distress than their heterosexual peers one year after they completed high school.

The researchers found that about half of the LGB youths’ emotional distress was related to the higher rates of bullying and emotional distress that they had experienced during high school – suggesting that other factors besides bullying were negatively affecting their emotional health.

“Perhaps some environmental or societal forces are raising the emotional distress levels of LGB youth,” Robinson said. “They might be getting messages from their peers that aren’t exactly bullying but are signals that it’s not acceptable to be gay. They also may be getting those messages from adults, from certain media or other sources.”

Because emotional distress early in life, including the anguish caused by bullying, is predictive of emotional problems later on, it’s important for parents and educators to recognize the signs that children and youth are struggling and intervene to address mental health needs as early as possible, Robinson said.

Reducing victimization of LGB youth through bullying-intervention programs would help mitigate some of LGB teens’ risk for mental health problems in high school and later in life.

However, broader changes are needed as well to create safer and supportive environments so that sexual minority youth are not stigmatized, socially rejected and isolated, increasing their risk for victimization and emotional problems into adulthood, Robinson said.

Climate-altering programs might include diversity training for families that have non-heterosexual parents, discussion of same-gender relationships in sex-education courses, gay-straight alliances, and open dialogues about homophobia in athletics and physical education programs, the researchers suggested.

Co-authors of the study were Dorothy L. Espelage, who is a professor of educational psychology at Illinois; and Ian River, a professor in the department of sport and education at Brunel University in the United Kingdom.
Firms that purport to value shareholders pay CEOs more

By Phil Ciciora, Business and Law Editor

Ever wonder why CEOs at poorly performing companies continue to receive exorbitant pay packages? According to a study from a U.S. labor professor, firms that trumpet how much they value shareholders actually pay the CEOs more than ever, regardless of the quality of their performance as executives.

Using compensation data from 290 chief executives of U.S. firms over an 11-year period, Taekjin Shin, a professor of labor and employment relations at Illinois, shows that CEOs at firms with the appearance of shareholder-value orientation receive greater compensation in the form of higher pay and greater stock options.

“Shareholders have begun to take a more active role in publicly traded companies,” Shin said. “But it’s only been from the 1980s onward that shareholders have begun to take a more active role in publicly traded companies. One would expect that with all these kinds of changes and the empowerment of shareholders, the CEO would probably have lost some power because, at least, their influence over their pay. The evidence suggests that the opposite has happened, which is kind of counterintuitive.”

Shin chalks it up to CEOs, already politically savvy insiders, knowing how to “game the system.”

“They know that the dominant paradigm right now is shareholder maximization and that shareholders are king, so they’ll look for ways to compensate them by instituting all sorts of changes in the board of directors, in compensation policy and stock options.” Shin cited.

“By those reforms are often just a fig leaf, and serve CEOs利益 by further justifying their hefty compensation packages.”

Moreover, when firms strengthen the appearance of having a shareholder-value orientation, CEO pay increases the subsequent year, suggesting that firms tend to adopt monitoring and incentive-alignment governance mechanisms in order to gain the appearance of shareholder-value orientation rather than to curb executive compensation, Shin said.

“All sorts of structural appearances by the firm, such as having more independent board members and a greater level of institutional ownership – those kinds of activities that shareholders don’t want to do much about,” he said. “It creates the appearance to outsiders that the firm is really living up to the mainstream model of corporate governance.”

According to the study, by employing such symbolic management tactics, top executives are getting more pay, according to their reputation and a higher valuation of both the firm and the executive talent. The study also suggests that executive compensation has played an important role in providing incentives for top managers to make strategic decisions that conform to the shareholder-value maximization principle.

“We’ve known for decades that CEOs have tremendous power and influence integrated in sustainability. ‘Shareholder-value maximization’ has espoused the principle of shareholder-value orientation. The evidence suggests that CEOs at firms with the appearance of sustainability should be rewarded both in relative pay and constraint CEO influence over the pay. The evidence suggests that the opposite has happened, which is kind of counterintuitive.”

Shin and other scholars such as William Frey have found that CEOs are paid more, regardless of the quality of their performance as executives. The study also considers what effect the shareholder-value revolution has had on other countries, including the countries that were on the other side of the executive-compensation spectrum. "Until the Great Regression, just about everyone agreed that the CEO should think about one thing and one thing only: Maximize shareholder value," Shin said. "Once famously evangelists for public interest and environmentalism, they don’t amount to much," he said. "It creates the appearance that too much business is being run for the benefit of shareholders, not the welfare of the community or the environment."

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CEO pay

Using compensation data from 290 chief executives at large U.S. firms over a 11-year period, Taekjin Shin, a professor of labor and employment relations at Illinois, showed that firms that trumpet how much they value shareholders actually pay their CEOs more, regardless of the quality of their performance and praise from the business community.”

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Study of pipestone artifacts overturns an old assumption

By Diana Yates

Life Sciences Editor

in the early 1900s, an archaeologist, William Mills, dug up a treasure-trove of carved stone pipes that had been buried almost 2,000 years earlier. Mills was the first to dig the Native American site, called Tremper Mound, in southern Illinois when Inspector of the U.S. Army. He made a reasonable – but untested – assumption. The pipes looked as if they had been carved from local stone, and so they were. That assumption, first published in 1916, has been repeated in scientific publications to this day. But according to a new analysis, Mills was wrong.

In a new study, the first to actually test the stone pipes and pipestone from quarries across the upper Midwest, researchers conclude that those who buried the pipes in Tremper Mound got most of their pipestone – and perhaps even the finished, carved pipes – from Illinois.

The researchers spent nearly a decade on the new research. They first collected the mineralogical signatures of stone found in traditional pipestone quarries in Illinois, Kansas, Michigan, Minnesota, Missouri and Ohio. Then they compared the material found in those quarries to the mineralogical makeup of the artifacts left behind by the people who lived on the Mound.

Less than 20 percent of the 111 Tremper Mound pipes they tested were made from local Ohio stone. About 65 percent were carved from local stone, and so they were. The researchers are still puzzling over how many of these materials made it to Ohio from Illinois, and are baffled by another new discovery: Pipes from a site only about 40 miles south of Tremper Mound, an elaborate cluster of immense mounds known as Mound City, were carved almost entirely from local stone. Mound City was inhabited at about the same time or shortly after Tremper Mound, and the pipes found there are stylistically very similar to the Tremper pipes.

The researchers describe their findings in a paper in American Antiquity. These results should remind archaeologists that they need to be aware of how materials moved to and from quarries across the upper Midwest.

Strange things, strange minerals, strange things were really a focus,” he said. Most of the carved stone pipes from that era have been found in Ohio, where very large caches of materials containing more than 100 pipes were ritually broken, burned and buried. Emerson.

The same style of pipes are found in Illinois, but many fewer have been discovered in Illinois to date, he said, and they are dispersed, not heaped together in giant hordes as they are in Ohio.

There is evidence of stone carving at the Illinois sites where the stone was gathered, but none at Tremper Mound, suggesting that the Illinois stone was carved into pipes before it was transported to Ohio.

The team used a variety of techniques to analyze the material in the quarries and the artifacts. One method, called X-ray diffraction (XRD), produces a distinct signal that reflects the proportion of minerals in different types of stone. The stone must be pulverized, however, to subject it to XRD. To analyze the intact pipes, the researchers used a non-destructive portable technology, called PIMA, which illuminates a specimen with short-wavelength infrared radiation and records the refraacted (unabsorbed) wavelengths, allowing investigators to identify the minerals present. They verified the accuracy of the PIMA by comparing its results to those gathered with XRD on quarry specimens and broken pipes.

The new findings should challenge archeologists to look more carefully at the evidence left behind by the Hopewell people.

“In this is how mythology becomes enshrined in science,” he said. The study also confirms that the people who produced these pipestone artifacts, known today as members of the Hopewell tradition, were diverse and varied in their cultural practices than scientists once appreciated, Emerson said.

The Hopewell people, who lived in the region from 100 B.C. to roughly A.D. 400, have long been the subject of speculation, as the artifacts they left behind and the manner in which these goods were disposed of are not easily understood. Those living in southeastern Ohio, especially, seemed to be “conspicuous consumers and connoisseurs of goods,” Emerson said.

The Hopewell people from that area collected “massive assemblages of obsidian from Wyoming, mica from the Appalachian Highlands, and caches of elaborately carved pipes,” Emerson said. They also collected shells from the Gulf Coast, and transported the shells in giant hordes as they are in Ohio.

The ISAS and ISGS are units of the Prairie Research Institute at the U. of I. The ISAS and ISGS are units of the Prairie Research Institute at the U. of I.

Inside

Jobs

To view job postings, apply for civil service or academic jobs at Illinois, or to update your application information:

jobs.illinois.edu

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Wabash River with the activities and goals of the center. “Our research on the Wabash has been supported by four National Science Foundation grants over the last six years, and we are beginning to expand this work to include a focus on the relationships between river geomorphology and ecological conditions, especially on the fish,” Rhoads said. “Tremendous opportunity exists to connect this work to the riparian expertise of scientists at NGREC. Connecting our work on the Wabash to NGREC will also expand the scope of NGREC to a regional scale by moving it beyond its current focus on the Illinois, Mississippi, and Missouri rivers.”

Rhoads also wants to contribute to the growth and development of educational programs between the center and community colleges.

By Chelsey B. Coombes

News Bureau intern

Climate change’s costly weather consequences

Throughout 2012, the United States was battered by severe weather events such as hurricanes and droughts that affected both pocketbooks and livelihoods. Research suggests that in the coming years, U.S. five-day forecasts will show an increase in the number of extreme weather events, a trend linked to human-driven climate change.

Donald Wuebbles, a professor of atmospheric sciences at the U. of I., discussed extreme weather last week in a presentation at the annual meeting of the American Association for the Advancement of Science in Boston.

In recent decades, multi-day heat waves and severe precipitation have become more frequent. For example, in the U.S., the 1950s, the number of days that set record high temperatures was equal to the number of days that set record low temperatures. By the 2000s, the United States was twice as likely to see a record high as a record low.

“Human-driven climate change is in fact driving changes in severe weather, and that leads to a lot of potential impacts in both man’s and nature’s life,” Wuebbles said.

As the global climate changes, normal weather patterns are altered. This is because the increasingly warmer atmosphere holds larger amounts of water vapor, which energizes storms, Wuebbles said.

The consequences of severe weather are much greater than the disappointment of a missed picnic or the inconvenience of a canceled cruise. Weather-related disasters incur huge expenses, taxing both public funds and private equity. According to the National Oceanic and Atmospheric Administration’s National Climate Data Center, the cost of severe weather events in 2012 was more than $1 billion each occurred in 2012.

“What we’ve seen in general is that the number of billion-dollar events has increased over the last three decades,” Wuebbles said. “It’s not just hurricanes, it’s really a number of different types of weather extremes that are increasing, and that’s the worry is.”

In his talk, Wuebbles discussed the current forecasting of severe weather in relation to the science of climate change, as well as speak about the issues and uncertainties that will affect the U.S. and world in the coming years.

Extreme weather

U. of I. atmospheric sciences professor Donald Wuebbles said at the 2013 AAAS meeting that climate change is increasing the number of severe weather events.

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The new findings should challenge archaeologists to look more carefully at the evidence left behind by the Hopewell people.

“This study really says to the archaeological community, you need to go back to the drawing board,” he said. “You’ve been telling stories for decades that are based on essentially misinformation.”

The research team also included Kenneth Farnsworth, ISAS research associate; Sarah Wissmann, the director of the Program on Ancient Technologies and Archaeological Materials at ISAS; and Randall Hughes, a senior scientist at the Illinois State Geologic Survey.

The National Science Foundation supported this research.

The ISAS and SGS are units of the Prairie Research Institute at the U. of I.
**brief notes**

Beckman Institute

Thursday concerts begin at 12:20 p.m.

The Beckman Institute for Advanced Science and Technology is hosting free lunchtime concerts featuring the Beckman Institute Orchestra and various student ensembles. Concerts are held in the Beckman Institute atrium.[...]

CDL/ECDL

Half- and full-day child care available

The Child Development Laboratory at 1105 W. Nevada in Urbana, and the Early Child Development Laboratory, at 1005 W. Nevada, are hosting free tours. Thad Morrow, who opened the Early Child Development Lab facility Wednesdays at 3:30 p.m. and Thursdays at 11 a.m. for children ages 2 to 2.5 years old, will lead the tours suspended during the enrollment months of April and May. To complete an online enrollment application, visit cdl.illinois.edu. For additional information or to schedule a tour, call 217-333-2550.

For full consideration, submit applications for the half- day programs by April 1 and for the full-day programs by May 1.

WILL-TV

Local cooking show is March 4

During “Come and Get It! Your Family Dinner Favorites,” to be broadcast on WILL-TV at 7 p.m. March 4, Central Illinois home cooks and local chefs will join host Lisa Brails to prepare foods families love.

WILL-TV selected five home cooks who will share how they prepare their family’s favorite foods. They’ll be joined by two area chefs and local food providers who will share tips on choosing and using locally sourced ingredients, pairing beverages with foods and involving family members in preparing meals. Viewers who pledge $50 or more to WILL may request the companion cookbook, with more than 100 recipes submitted by viewers, as a thank-you gift.

For more information about the website, visit go.illinois.edu/wildlifeencounters.

Center for Business and Public Policy

Nobel laureate to speak March 7

The Center for Business and Public Policy will host Professor Peter Diamond, the 2010 Nobel laureate in economics, at 4 p.m. March 7 in the Deloitte Auditorium of the Business and Instructional Facility. His lecture, “Unemployment and Debt,” is free and open to the public.

Diamond is an Institute professor emeritus of economics at the Massachusetts Institute of Technology, where he taught from 1966 to 2011. He was awarded the Nobel Memorial Prize in Economic Sciences in 2010 with Dale Mortensen and Christopher Pissarides for their work on “search costs” in labor markets – or the frictions that arise when employers need to find new workers and vice versa. He is an expert on public finance, especially Social Security, and has consulted for various government agencies on the program.

Social and Behavioral Research Council

Nominations sought for faculty awards

The Social and Behavioral Research Council seeks to recognize accomplishments by faculty members in the social and behavioral sciences. The council has established awards for junior faculty research, mid-career research, education, outreach and career achievement. The awards are open to all full time U. of I. tenure-track faculty members.

Detailed information about the awards and the application process can be found at http://sbrresearch.illinois.edu/sbrc-awards.

The deadline for nominations is Feb. 28. Recipients will be recognized at an awards ceremony April 3. Questions should be directed to Monika Stodolska at stodolska@illinois.edu, or Bill Bernhard at bernhard@illinois.edu.

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Civil rights leader Myrlie Evers receives Presidential Award and Medallion

Myrlie Evers, who has spent her life promoting racial equality, received the U. of I. Presidential Award and Medallion during a ceremony Feb. 20 on the Urbana campus. Evers, the widow of slain civil rights activist Medgar Evers and the first woman to chair the NAACP, also spent three decades seeking justice after the assassination of her husband. She joined 17 other medalion recipients since the award program was created in 1984 to recognize individuals whose lives have had a profound impact on the university.

University President Bob Ester said Myrlie Evers has helped lifted up society and opened doors of opportunity during more than a half-century as one of the nation’s leading voices for diversity, fairness and social justice.

“Evers’ vision, courage and perseverance are an inspiration for us all,” Ester said. “Even in the face of opposition, she stood strong and helped transform our campuses and the nation.”

Evers has been involved in the civil rights movement since the 1950s, working alongside her husband when he became the Mississippi field secretary for the NAACP.

After he was assassinated in 1963 and his accused killer was freed in two mistrials, she kept her case alive for more than 30 years, leading to a conviction in 1994.

She also continued her active role in the NAACP, and served as the first woman to chair the organization from 1995 to 1998. After the 1994 conviction, Evers established the Medgar Evers Institute in Jackson, Miss., an educational center dedicated to his life.

In 2012, she joined the faculty of his alma mater, Alcorn State University, and is finalizing programs to commemorate the 50th anniversary of his death. In recognition of her lifetime of advocacy for civil rights, she was awarded the Nobel Peace Prize in 1997 and was named to the National Women’s Hall of Fame in 1999.

“Myrlie Evers is a true American hero,” said University President Bob Ester. “Her dedication to combating hatred, discrimination and violence has inspired millions of Americans to work together to build a better society.”

Evers delivered her acceptance speech in the Beckman Institute Atrium at 12:20 p.m. March 7 in the Deloitte Auditorium of the Business and Instructional Facility. It is a free service open for public use.

A teacher resource section complements the lessons, which can be augmented by a classroom visit by volunteers from the clinic who bring live birds of prey, such as owls and raptors.

The mission of the classroom interaction with the birds is simple, said Dr. Julia Whittington, a professor of veterinary clinical medicine at Illinois and a developer of the program. “Birds can teach students about environmental stewardship when they see the birds in person.”

The clinic has plans to expand the website and create more varied types of lessons. The clinic has worked with the Anita Pures Nature Center in Urbana to develop tools for educators, which would enhance the Web-based lessons through hands-on activities, such as owl-pellet dissection kits. Additionally, the clinic hopes to create educational videos to complement the lessons on the website as well as educate the public about how to interact with wildlife.

Since its founding in 1978, the clinic has a rich history of public interaction, outreach and education, and the new website is an extension of this philosophy.

“We have a three-pronged purpose,” Whittington said. “We provide veterinary care to wild animals while offering students an opportunity to gain valuable experience. But just as important is our effort to support conservation initiatives and engage the community in awareness of our natural resources and the negative impacts our environment.”

For more information about the website, visit will.illinois.edu/wildlifeencounters.
The Prairie Research Institute will host its fifth annual Naturally Illinois Expo March 8-9 on the grounds of the Natural Resources Building. Faculty and staff members and their families as well as all students are invited to attend and enjoy more than 50 exhibits, demonstrations and hands-on activities that showcase the work of the institute, home of the state scientific surveys. For more than 160 years, the surveys have applied cutting-edge science and expertise for the benefit of the state.

Among this year’s exhibits: “Floodplain Simulation,” “Kids’ Fossil Dig,” “Bugging the Dinosaurs: 3-D Reconstruction of Fossil Insects,” “Animal Bones of Illinois” and “Plastics to Oil.”

The expo is free and open to the public from 9 a.m. to 3 p.m. on March 8 and 10 a.m. to 3 p.m. on March 9.

The event is funded by donations. To donate, volunteer or find out more, visit prairie.illinois.edu/expo. Groups should contact Eric Plankell, 217-265-8029, in advance.

Saturday morning events begin with the sixth annual Earth, Wind and Fire 5K Run and 2.5K Walk beginning at 9 a.m. at the College of Education Building across from the Natural Resources Building. Proceeds from the run support the expo. For more information and to pre-register, visit prairie.illinois.edu/expo. Groups must register in advance.

Center for African Studies

Peacebuilding in West Africa featured

In recent weeks, the French military incursion in Mali, followed by a complicated hostage-taking in Algeria, has shown how the Illini community is making an impact in Champaign and around the world at 10:15 p.m. on Feb. 21.

The Big Ten Network’s new series, “BTN LiveBIG,” will highlight how the Illini community is making an impact in Champaign and around the world at 10:15 p.m. on Feb. 21.

The episode will include a look at how Illinois engineer professor John Rogers and his team are working with amputees in developing countries. The organization works to re-enable amputees around the world with simple, innovative and affordable prosthetics.

The Center for African Studies at the U. of I. is bringing two nationally known scholars on Mali to campus for a conference, “Peacebuilding in West Africa: Looking for Answers,” from 9 a.m. to 4:30 p.m. March 11 at the Levis Science Center. Gregory Mann, of Columbia University, and Suzanne Wing, from Haverford College, will take part in the event, chaired by Merle Bowen, the director of the center. Mann and Wing will be joined by other leading experts on West Africa including Scott Straus, of the University of Wisconsin at Madison, who will discuss contemporary peacebuilding and conflict resolution in West Africa; Abu Bah, from Northern Illinois University, speaking on suggestions for future directions; as well as U. of I. scholars Thomas Bassett and Carol Spindel, who will speak on the Ivory Coast; and Maimouna Barro and Timothy Wedig, who will discuss lessons from other parts of the continent, including Senegal and Rwanda.

Registration is not required. For more information, including a full list of speakers, go to www.afrst.illinois.edu/. Co-sponsors: the departments of African-American studies, anthropology, French and religion; the Program in Arms Control, Disarmament and International Security; the Center for Global Studies (through a U.S. Department of Education Title VI Grant); Illinois Program for Research in the Humanities; and the Social Dimensions of Environmental Policy initiative. Financial support also came from the United States Institute of Peace.

Shack dwellers’ movement

South African scholar/activist to lecture

Richard Pithouse, a scholar, journalist and activist with the Durban, South Africa, shack dwellers’ movement Abahlali BaseMjondolo, will give a lecture at 4 p.m. March 7 in the Knight Auditorium of the Spurlock Museum.

In his lecture, “Thought Amidst Waste: Politics in Shack Settlements in South Africa,” Pithouse will discuss the political history of those settlements and how the struggles of contemporary shack dwellers illuminate the prospects for emancipatory politics there.

Pithouse also will participate in two panels during his visit to the U. of I. – one on “Urban and Housing Activism From Below” at 3 p.m. March 4 in 313 Gregory Hall, and the other on “Community Knowledge” at 2 p.m. March 9 at the Champaign Public Library, 200 W. Green St.

The lecture and panels are free and open to the public. The lecture is sponsored by the Illinois Program for Research in the Humanities and the department of history.

Big Ten Network

‘BTN LiveBIG’ features Illinois on Feb. 21

The Big Ten Network’s new series, “BTN LiveBIG,” will highlight how the Illini community is making an impact in Champaign and around the world at 10:15 p.m. on Feb. 21.

The episode will include a look at how Illinois engineer professor John Rogers and his team are working with a product that attaches to skin to help monitor heartbeat, as well as muscle and brain activity.

Viewers will also get a look at the university-based initiative Scientific Animations Without Borders. The program is dedicated to developing and deploying animated educational materials that can be used to improve the lives of people in developing nations. Animation is used as a learning tool with a voice track recorded in any language, and then delivered through the Internet and viewed on a computer or tablet.

The episode will also give viewers a look at Illinois wheelchair basketball player Patty Cisneros, who helped the Illinois wheelchair basketball program win recent back-to-back national championships. The team won two gold medals playing for the U.S. National Paralympic Team. She now is a mentor for young people, sharing her story of overcoming injury and adversity.

Also, viewers will learn about Illini Prosthetic Technologies, an organization of Illinois engineering students who focus on the problems faced by amputees in developing countries. The organization works to re-enable amputees around the world with simple, innovative and affordable prosthetics.

Other Big Ten schools to be featured: Michigan (Feb. 22), Wisconsin (Feb. 26), Iowa (Feb. 27), Minnesota (March 1) and Nebraska (March 6). Information and clips of previously broadcast episodes can be found at BTNLiveBIG.com.

‘The Lord Is Not on Trial Here Today’

Film to be screened, discussed March 7

In recognition of the 65th anniversary of the landmark Supreme Court decision McCollum v. Board of Education, a free screening of the Peabody and Emmy award-winning documentary “The Lord Is Not on Trial Here Today” will be presented at 7 p.m. March 7 in the auditorium of the National Center for Supercomputing Applications Building.

Following the screening, Ken Paulson, a former editor and senior vice president of USA Today, now president and chief executive officer of the First Amendment Center at Vanderbilt University, will participate in a panel discussion regarding the relevancy of the decision today. Journalism professor Jay Rosenstein, the documentary’s producer, writer and director, will moderate the panel. Other members of the panel will be named later.

“The Lord Is Not on Trial Here Today” tells the personal story of the late Vashti McCollum, of Champaign, and how her family pursued the Supreme Court decision McCollum v. Board of Education, (March 1) and Nebraska (March 6). Information and clips of previously broadcast episodes can be found at BTNLiveBIG.com.
her efforts to protect her 10-year-old son led to a landmark First Amendment case, which established the separation of church and state in public schools.

Paulson is a columnist on USA Today’s board of contributors, writing about First Amendment issues and the news media. He is a graduate of the U. of I. College of Law.

The department of journalism in the College of Media is sponsoring the screening and panel discussion.

‘Walk on the Wild Side’
Auction supports wildlife, vet students

On March 9, wildlife fans can take a “Walk on the Wild Side” in support of local wildlife and tomorrow’s veterinarians.

The dinner and auction event, held from 6:30 to 9 p.m. at the I Hotel and Conference Center, will benefit the U. of I. Wildlife Medical Clinic.

Guests can express their wild sides with face painting from the Zoo Lady’s Zoo Crew while encountering animals from a local zoo and the clinic’s resident hawks and owls.

The event will include a silent and live auction of adventure and vacation packages, animal footprints, and other artwork by wild animals, including clinic residents Nokomis, a great horned owl, and Odin, a red-tailed hawk.

Register by March 1. VIP guests may attend a pre-event reception from 5:30 to 6:30 p.m. where they can enjoy a closer encounter with resident raptors and local zoo animals, bid on exclusive auction items, and celebrate Wildlife for Life recipients Mark and Jackie Yarborough.

For more information and to register, visit vetmed.illinois.edu/wmc/, or call 217-333-2761.

Baum Memorial Lecture
Social Security, Medicare discussed

Daniel Shaviro, the Wayne Perry Professor of Taxation at the New York University School of Law, will present the U. of I. College of Law’s Ann F. Baum Memorial Lecture on Elder Law. The lecture will be from noon to 1 p.m. March 4 in the Max L. Rowe Auditorium in the College of Law Building.

Contemporary political debate about Social Security and Medicare often conflates the issue of the programs’ long-term fiscal sustainability with that of whether their design should be made more market-based, such as by transforming Social Security into a private accounts program and Medicare into a voucher-based program. In fact, the sustainability and design issues are fundamentally separate.

In his lecture, Shaviro will assess the case for making the programs more market-based by using two main vehicles: the model for understanding the programs’ main substantive features and rationales that is offered in his books, “Making Sense of Social Security Reform” and “Who Should Pay for Medicare?”; and Paul Samuelson’s classic description of Social Security as providing what we would now call an implicit financial instrument that reflects an intergenerational compact.

Shaviro is a graduate of Princeton University and Yale Law School. Before entering law teaching, he worked at Caplin & Drysdale, a leading tax specialty firm, and at the Joint Congressional Committee on Taxation. Shaviro began his teaching career at the University of Chicago Law School in 1987, and he joined the NYU School of Law in 1995. Shaviro’s scholarly work examines tax policy, budget policy and entitlements issues. He is working on a book titled “Fixing the U.S. International Tax Rules.”

‘Centrality of Translation in the Humanities’
NEH grant to fund summer institute

Elizabeth Lowe, the director of the Center for Translation Studies, and Chris Higgins, a professor of philosophy of education, are the recipients of the National Endowment for the Humanities grant for Summer Seminars and Insti...
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The television episode (season three, episode 12) will explore a wave of mysterious deaths associated with (possibly alien robotic) cockroaches. This episode has ties to the U. of I. campus because it features a character loosely based on entomology professor and department head May Berenbaum, who founded the Insect Fear Film Festival. As is tradition, interactive exhibits and activities will offer attendees a chance to learn “the truth about insects” before the on-screen entertainment begins. Exhibits and activities include exotic insect displays, a cockroach petting zoo, festival T-shirts and face painting. The program introduction will begin at 7 p.m., with an announcement of the “InsX-Files” art contest winners and the presentation of an award to Chris Carter. “War of the Coprophages” will start at 7:30; a question-and-answer session with Carter will follow at 8:15; and at 8:45, the “X-Files” movie will start, with more opportunities to question Carter at the end of the program.

By Diana Yates

‘X-Files’ creator to attend 30th Insect Fear Film Festival

Infectious honey bees and cockroaches took over to down humans will be the cinematic scare fare at this year’s Insect Fear Film Festival, an event organizers are calling “The ImX-Files: The Truth (About Insects) Is Out There.”

Special guest Chris Carter, the creator, writer, producer and director of “The X-Files” television series and a writer for the movie “The X-Files: Fight the Future,” will answer questions about all things X-File between screenings of an “X-Files” TV episode and the movie.

The television episode (season three, episode 12) will explore a wave of mysterious deaths associated with (possibly alien robotic) cockroaches. This episode has ties to the U. of I. campus because it features a character loosely based on entomology professor and department head May Berenbaum, who founded the Insect Fear Film Festival in 1984.

“I asked Chris Carter to pick his favorite insect-related TV episode for the festival and to my unspeakable delight the episode he picked is ‘War of the Coprophages’,” Berenbaum said. “This is the episode in which disturbing cockroach-related deaths are investigated by FBI agent Fox Mulder, who partners with a USDA entomologist named Dr. Bambi Berenbaum, so of course this one is my personal favorite.”

The writer for the episode, Darin Morgan, consulted several of (May) Berenbaum’s books to write the episode.

“So I would say this episode has a much higher level of entomological accuracy than most insect-related television,” she said.

The story is packed with fun bug facts culled from Berenbaum’s books. It includes, among other things, Ekborn’s syndrome (also known as delusory parasitosis – brought on, perhaps, by the false conviction that insects are infesting your body), anaphylactic allergic responses to cockroaches, the biology and diurnal habits of the Asian cockroach, the grooming behavior and acoustical talents of cockroaches, and the Egyptian worship of scarab beetles.

The feature film “involves alien attempts to take over the planet through genetically modified corn that contains a virus that can be transmitted (to humans) by honey bees through their sting,” Berenbaum said.

Carter’s visit is in keeping with a significant anniversary tradition. Berenbaum said. Simon J. Smith, the director of the 2007 animated feature film “Bee Movie,” was a guest in 2008 (the 25th festival); and Bert I. Gordon, the director of several “big bug” films of the 1950s, including “Beginning of the End,” featuring giant grasshoppers attacking Central Illinois, was a guest in 2003 (the 20th festival).

The festival will open at 6 p.m. in Foellinger Auditorium on the U. of I. campus. As is tradition, interactive exhibits and activities will offer attendees a chance to learn “the truth about insects” before the on-screen entertainment begins. Exhibits and activities include exotic insect displays, a cockroach petting zoo, festival T-shirts and face painting. The program introduction will begin at 7 p.m., with an announcement of the “ImX-Files” art contest winners and the presentation of an award to Chris Carter. “War of the Coprophages” will start at 7:30; a question-and-answer session with Carter will follow at 8:15; and at 8:45, the “X-Files” movie will start, with more opportunities to question Carter at the end of the program.

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By the end of the program, participants will have the opportunity to work with some of the world’s foremost translation scholars and practitioners who will lead the case study discussions. U of I is represented by Lowe and Higgins, along with Valerie Hotchkiss, the director of the Rare Book and Manuscript Library, and Joyce Tolliver, a professor of Spanish, Italian and Portuguese. Guest faculty include writer William Gass; Suzanne Jill Levine, translator of Latin American Boom works; philosopher and psychiatrist Adam Phillips; National Medal of the Arts winner Gregory Rabassa; bibliotranslator and scholar David Rosenberg; and translation scholar Rainer Schulte. In addition to working through the four cases together, each participant will develop an additional case, examining questions of translation as they arise in the context of his or her own teaching and scholarship.

The award reflects the innovative work being done at the U. of I. in the field of translation studies. The directors anticipate that this institute will be the beginning of ongoing collaborations among teachers and scholars working in the field of translation as a bridge between disciplines.
Researchers straining to improve electrical material

By Liz Ahlberg
Physical Sciences Editor

ike turning coal to diamond, adding pressure to an electrical material enhances its properties. Now, U. of I. researchers have devised a method of making ferroelectric thin films with twice the strain, resulting in exceptional performance.

Led by Lane Martin, a professor of materials science and engineering, the group published its results in the journal Advanced Materials.

Ferroelectric materials, metal oxides with special polarization properties, are used in a number of advanced electronics applications. When electricity is applied, they can switch their polarization, or the direction of their internal electric field, which makes them useful in devices such as computer memories and actuators. Ferroelectric materials are especially useful in aerospace applications because they are less susceptible to radiation than traditional semiconductors.

Strain in these materials can alter their properties and improve their performance. A lot of research in ferroelectric materials has focused on making strained thin films with alternating layers only a few nanometers thick of materials with slightly different crystal structures.

“It turns out that if you put pressure on certain types of materials, the properties completely change,” Martin said. “In our case, we administer pressure by straining or stretching thin versions of these materials like one would stretch plastic wrap to fit on a bowl. You can induce things that don’t exist at ambient conditions; you can make phases and properties that don’t exist.”

The films are made of lead zirconate titanate (PZT), its composition slightly different from the crystals in the films. Traditionally, films of PZT have been made up of a single composition, grown on a substrate with a slightly different crystal structure to cause strain in the PZT. However, too much strain causes the PZT to revert to its original crystal structure. This limits researchers’ ability to change the properties of these materials for better device performance.

The Illinois researchers overcame this limitation by gradually shifting the concentrations of Zr and Ti as they grew the thin films, incrementally changing the crystal structure. From layer to layer, the structures are very similar, yet the composition of the PZT at the top and bottom of the film is very different, transitioning from a PZT composition with 80 percent Zr to 80 percent Ti. This gradual change, instead of the usual layered approach, results in little localized strain but large overall strain.

“We have taken a material with similar mechanical properties to a dinner plate, the same kind of hardness, and effectively figured out a way to stretch that plate without breaking it,” Martin said. “With our method, we’ve been able to extend our ability to strain these materials. We go to the nanoscale so we can pull on these films and dramatically change the shape, and that affects the properties.”

Thanks to the large strain, the compositionally graded PZT films not only have improved properties, but also entirely new properties. Most notably, the films have a built-in electric field, called an intrinsic potential. This means that it can perform some functions without needing an external current or field applied to it. In addition, it means that the material has a preferred polarity, which opens the door for new applications.

“This sort of built-in field is very useful,” said Karthik Jambunathan, a graduate student and co-author of the paper. “Otherwise you have to engineer similar effects using features not native to the materials to have the same thing happen, but it is much more difficult and less easily controlled. Here, it’s grown into the material to begin with.”

For example, ferroelectric materials widely have been used in memory applications that rely on spontaneous polarization. However, to read a bit of data in computer memories made with a traditional ferroelectric material, its polarity is switched. This means that every time the bit is read, it has to be re-written and compared to a reference bit. But if the material had a built-in electric potential, engineers could make bits that would not need to have their polarity switched to be read, so computer components made with the new material could be smaller, faster and longer lasting.

Now the Illinois team plans to further explore potential applications, as well as apply their gradient film technique to other types of ferroelectric materials in search of even more novel and unexpected properties.

“The Defense Advanced Research Projects Agency, the Office of Naval Research, the Army Research Office and the Air Force Office of Scientific Research supported this work. Martin also is affiliated with the Frederick Seitz Materials Research Laboratory at the U. of I.”

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