By Silvia Forrest
Assistant Editor

The Urbana-Champaign Senate agreed to postpone voting on the academic year budget in a vote held Aug. 31, but senators decided to proceed with the vote on the recommendation of the Senate Academic and Governmental Practices and Ethics Commission.

The Senate voted 91-66 to postpone acting on a resolution to select two executive sessions, senators agreed with and would have challenged had he been aware of it. Agreeing denials because of applicants’ connections to influential people, White told senators that he had no knowledge of the Category I list. White told senators that he had no knowledge of the Category I list or of the practice of reversing denials because of applicants’ connections to influential people.

While the Springfield and Chicago campuses will have to be engaged in the decision whether to retain White, the UI Board of Trustees, of which Quinn is an ex officio member, has the ultimate say. The trustees are scheduled to meet Sept. 10 at Urbana, and Quinn is expected to attend.

After delivering brief remarks, White and Herman answered senators’ questions about their participation in admitting applicants who were on the Category I list. White told senators that he had no knowledge of the Category I list or of the practice of reversing denials because of applicants’ connections to influential people. White told senators that he had no knowledge of the Category I list or of the practice of reversing denials because of applicants’ connections to influential people.

Before (1948) Stone Bylot Island glaciers, as photographed from the air in 1948. The glacier at the bottom of the image has no formal name, but is designated E20 of Army 4620 of the Glacial Inventory of Canada, Natural Resources Canada.

After (1991) The severely shrunken glacier E20, as photographed from the air in 1991. The light-colored material around the glacier marks its former size.

Quinn appoints two to board of trustees

By Silvia Forrest
Assistant Editor

Gov. Pat Quinn announced two appointments to the UI Board of Trustees on Aug. 26, the first replacements of seven trustees who voluntarily resigned at the conclusion of a state commission’s investigation into influence-based admissions practices at the Urbana campus.

Quinn named Christopher G. Kennedy, president of Merchandise Mart Properties Inc., and Lawrence Oliver II, chief counsel in charge of investigations for Boeing Co., as his first two appointees to the revamped board. Kennedy replaced board chair Niranjan Shah, whose term expires in 2015, and Oliver replaced trustee Lawrence Epplie, whose term expires in 2013.

Kennedy, a resident of Chicago, has served in numerous capacities for Boeing Co., as his first two appointees to the revamped board. Kennedy replaced board chair Niranjan Shah, whose term expires in 2015, and Oliver replaced trustee Lawrence Epplie, whose term expires in 2013.

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Although the recurrence of child abuse and neglect declined in Illinois during this period, the state is failing to meet federal guidelines in these areas and could lose millions of dollars in federal funding as a result. And while child-welfare workers have an assessment tool that has been linked to lower rates of maltreatment recurrence, it still is underused in Illinois.

In 2003, all states were found to be in substantial noncompliance with most or all of the federal monitoring program that began in 2000. The seven standards that state child-welfare systems are evaluated on also include those for implementation and resentment and placement stability.

During the first round of federal reviews in 2003, 12 of 14 state systems appeared to be in substantial noncompliance with most or all of the standards – Illinois failed all seven – and were required to develop program-improvement plans to address each area of noncompliance.

The second round of federal reviews in 2008, 10 of 14 states were found to be in substantial noncompliance with most or all of the standards – Illinois failed in all seven – and were required to develop program-improvement plans to address each area of noncompliance.

“Although compliance with the requirements to complete a CERAP has increased for the state as a whole, up from 24 percent in 2003, regional data indicate that compliance increased for most regions from 2003 to 2006 and has remained fairly constant since. Moreover, compliance rates in the Cook County North region have remained significantly lower than in all other regions”

“If DCFS really try to increase compliance with completing the final CERAPC,” White said Tuesday that he would recommend the other five appointments to the UI Board of Trustees on Friday. The board’s next scheduled meeting is Sept. 10 at Urbana, which Quinn plans to attend.

“President of the university, I am responsible for the institution,” White said. “However, the efforts of the chancellor and direct responsibility is important. Admissions is a campus function. … To my knowledge, the problems that occurred on this campus are unrelated to undergraduate and College of Law admissions, did not occur at the other two campuses. … Those were campus issues.”

White said that reforms would be implemented quickly to ensure equal access to all applicants and that it was important for the university to name to the UI Board of Trustees our best men and women, who reflected the best of Illinois.”

“With the appointment of these two men, we are definitely strong and accomplished public servants, whose efforts as provost and chancellor – which include promoting racial and gender diversity, implementing the Institute for Genomic Biology and the Science and Technology Implementation Fund – reflect the best of Illinois.”

Following the vote on the recommendations so they could have more time to consider and discuss it.

After the vote, SEC chair Toby Lee L. Brian Stauffer urged seniors to spend the next two weeks consulting with their constituents.

“Later in the meeting, the senate passed a motion to send a letter to Governor Quinn to recommend that one or more faculty representatives be included on the reconstituted board of trustees and that faculty members be engaged in the vetting process for all potential UI trustees.”

Additionally, senators unanimously endorsed a report from the Senate Committee on Admissions, chaired by Christine Hurt, law, which recommended several reforms to insulate the Office of Undergraduate Admissions from improper influence. The committee’s recommendations were drafted in a clear admissions process, the UI Board of Trustees’ adopting a written policy prohibiting their involvement in the process creating a neutral body to respond to complaints of abuse of the new admissions policy.

“Although case workers almost always complete an initial CERRAP within 24 hours, they are completing CERRAPs when closing cases only 38 percent of the time, according to the report.”

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“The kids are always safer when there’s a CERRAP at closing,” said Tamara Fuller, associate director of the Children and Family Research Center. “So, that’s what we’re recommending, that DCFS really try to increase compliance with completing the final CERRAPs.”

Tamas Fuller, effective director of the Children and Family Research Center at Illinois, uses the tool of the Child Endangerment Risk Assessment Protocol tool has been linked to lower rates of maltreatment recurrence.

By Shanta Forrest

Editor

InsideIllinois is an employee publication of the Urbana-Champaign campus of the University of Illinois. It is published on the first and third Thursday of each month by the News Bureau of the campus Office of Public Affairs, administered by the associate chancellor for public affairs. Distribution is by campus mail.

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I'm normally an early morning runner. So, today, for instance, I woke up at 5 a.m. How do you fit your training schedule into the other parts of your life?

Tell me about your job.

I oversee the daily mail and distribution operation at the Library, as well as the storeroom. Mail sorting, distribution and shipping are the main duties we perform. That means that everything the Library receives – U.S. mail, FedEx, UPS, new books, magazines, media, departmental library supplies – comes through our unit first. Also, any item that's shipped out of the Library comes to our unit before leaving.

One of the U.S. letter carriers who delivered our mail said that the University Library receives the most mail of anyone in Champaign-Urbana. I didn't realize that, but I do know, firsthand, that we get a substantial amount – anywhere from five to 30 tubs of mail daily.

My personal work style consists of tackling whatever the job may require immediately. I don't like to put things off, especially since no day is ever the same. This makes advance planning somewhat difficult.

What's the most interesting aspect of your job?

That's easy. The people I work with are a good group. I like interaction with other people, and we've got a great community here at the Library. It feels like family.

What do you like to do off the job?

There are two things that are most special to me off the job: Being involved in my children's lives and running marathons. I'm very proud of my children and how well they're doing.

How many marathons have you run?

I've run 13 marathons, including Boston, New York City, Chicago, Columbus (Ohio), and the Illinois Marathon this past April.

I usually try to run a fall and a spring marathon, provided my body holds up.

What's the most challenging aspect of your job?

One of the biggest challenges is that from day to day, there is no way to predict how much mail will be delivered to the Library. The only certainty is that each and every day, there will be mail.

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This fall, I plan to run Columbus again. I'm also planning on going back to Boston next year. The Illinois Marathon was a special one for me.

What was your time?

I ran the Champaign course. The weather was perfect that day, too. I was also impressed by how well it was put on and how smoothly it went.

It was a nice course, flat and fast, which means it's a good qualifier for a Boston or a New York marathon. I predict that it's going to become an annual event.

How do you fit your training schedule into the other parts of your life?

I'm normally an early morning runner. So, today, for instance, I woke up at 5 a.m. and ran 9 miles. I'm pretty much a six-day-a-week runner. Running clears my head, keeps me in shape, and lets me eat whatever I want.

~ Interview by Phil Ciciora, News Editor
School provides more options for environmental studies

By Shantia Forrest
Assistant Editor

Although today’s college students are members of the most “wired” generation ever—with cellphones, iPods, Wiis and other electronic gadgets—many of them are keenly interested in the natural world as well. Students in the College of Liberal Arts and Sciences, who are interested in studying environmental subjects—whether their academic background is in science, the social sciences or the humanities—now have the opportunity to do so in the School of Earth, Society and Environment.

The school was formed two years ago as an association of the departments of atmospheric sciences, geography and geology. When the school opened its doors for the fall semester, nearly 120 students had enrolled in the new major. SESE’s enrollment had reached 400 students, including students in the new major and students in existing majors and graduate programs in the three departments, plus 56 students with minors.

The growth in enrollment reaffirms for Stephen Marshak, the school’s director and a faculty member in the department of geology, which was developed by Don Wuebbles, the Preble Professor of Atmospheric Sciences, with a NASA grant.

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Stephen Marshak, a faculty member in the department of geology, is also director of the School of Earth, Society and Environment, which was formed two years ago from the three Earth-related departments—atmospheric sciences, geography and geology—in the College of Liberal Arts and Sciences. Marshak is shown here in May 2008 on sabbatical in Anglesey, Wales, where he visited a memorial to Dennis Wood, a faculty member at Illinois who took geology students to his native country on field exercises.

Ad removed for online version
Interactive Web-based science tutorials can be effective tools for helping elementary school teachers construct powerful explanatory models of difficult scientific concepts, and research shows the interactive tutorials are just as effective online as they are in face-to-face settings, says a UI expert in science education.

David Brown, a professor of curriculum and instruction in the College of Education, said that elementary school teachers need high-quality, research-based resources to help them build a meaningful scientific knowledge base.

“Refining one’s scientific knowledge base through online interactive resources can help teachers develop a deeper conceptual understanding of scientific phenomena, making them better prepared to engage students in science-based activities,” Brown said.

In any curriculum, there is teacher background literature or other forms of digested information that teachers can study to refresh their memories or get the broad stroke outlines of what they’re going to teach.

The trouble with those teaching aids, according to Brown, is that the information they contain is “usually fairly terse” and isn’t interactive or research-based.

If teachers lack confidence in their scientific knowledge base, they’re probably going to avoid situations where they might be caught flat-footed by a student’s question, because they don’t want to be asked a question they don’t know how to answer, Brown said. So they’ll fall back on more traditional lesson plans that emphasize the rote memorization of scientific terms over inquiry-based forms of learning, such as hands-on activities and discussions of those activities.

But an emphasis on routinized learning doesn’t help students grasp the foundational science behind what they’re learning, Brown said.

“If online tutorials focus on explaining the underlying scientific concepts behind the phenomena rather than on the rote memorization of facts, that can help teachers form a more meaningful conceptual understanding of what they’re going to teach,” he said. “A teacher who has a firm scientific knowledge base can then help students understand the fundamental scientific ideas and concepts behind what they’re learning better.”

To test his hypothesis, Brown developed “Making Sense of Science,” an online multimedia tutorial that tested subjects’ pre- and post-test knowledge of the scientific concept of buoyancy.

In the first 10 interviews, the average post-test score increased by 16 percent; in the second group of 10, by 28 percent; and for a group of 68 online users, by 33 percent. Similarly, Brown discovered that the average post-test confidence scores nearly doubled after the respondents interacted with the tutorials, and the written explanations of their ideas went from “somewhat incoherent” to “coherent explanations that made use of relevant ideas,” he said.

“We found that our resources were effective, and they were as effective online as they were face-to-face,” Brown said.

The tutorials were also crafted to address the perceived deficiencies that Brown thought other teacher background information and online resources suffered from.

“The resources are designed to help teachers develop their ideas,” Brown said. “They’re not designed for teachers to use directly with the students, but rather as background information for the teachers to develop their ideas so they’ll be in a better position to engage students in activities.”

Those positive results make Brown guardedly optimistic that online resources for teachers can be developed that will be helpful in advancing reform in elementary science education.

“The focus in both national and state standards is involving students in inquiry-oriented activities,” he said. “This is just trying to provide a resource for teachers for what they’re already being asked to do at the national and state levels.”

Brown presented a paper that discusses this research at the national meeting of the American Educational Research Association in San Diego in April 2009.
Campus lowers energy consumption 6.5 percent for FY09

New billing system will help units track energy savings

By Sharita Forrest
Assistant Editor

Energy conservation efforts, and cheaper fuel prices, saved $7.5 million at the Urbana campus for Fiscal Year 2009, about $2.5 million more than had been projected shortly before the fiscal year ended on June 30, according to information released recently by Facilities and Services Division.

In June, F&S reported that data for the first 10 months of FY09 indicated consumption had declined 9.6 percent from FY08. However, after end-of-the-year accounting adjustments for coal deliveries and management FY09 ended 6.5 percent below FY08, said Terry Ruprecht, director of energy conservation at F&S.

“We’re pleased with 6.5 percent savings, but after the month of May, I thought we were doing better than that,” Ruprecht said.

The end-of-year adjustments took a portion of our expected reduction.

However, the campus did reach a landmark: It was only the second time during the past two decades that campus electricity consumption dropped from one year to the next, Ruprecht said.

The goal for FY10, which began July 1, is to reduce consumption by 5 percent below FY09 usage.

If achieved, that would surpass Chancellor Richard Herman’s campus-wide goal of reducing consumption by a total of 10 percent by the end of FY10.

Last week, colleges and other units on campus received their first energy statements indicating usage for the month of July.

Energy Billing System, a Web-enabled software that has been used by the University of Michigan for about five years, is being used by F&S to track and bill units individually for their consumption. It replaces the shadow billing system that the UI had in place for about a year and a half and used to issue statements -- but not bills -- for the 80 largest energy-consuming buildings.

With the implementation of EBS, usage is calculated at the departmental level, and all campus buildings, rather than just the 80 largest, are being billed for their usage.

As with the shadow billing system, utility usage is allocated to departments based upon their percentage of assigned space within a building, but takes into account high-energy-use equipment and facilities such as data centers, fume hoods and animal rooms.

Energy statements are available online with access to historical data by building and by utility -- for example, electricity, steam, chilled water, including utilities services supplied by outside companies such as Ameren.

Utility contacts and people designated as energy liaisons within units were invited to attend training sessions at F&S Aug. 24-26 to learn about the system.

“EBS has all manner of reporting capabilities and diagnostics that were non-existent in the old system,” Ruprecht said. “Before, we could generate a statement and that was pretty much it. We wanted to show them how they can create reports, do year-to-year comparisons and see historical data in bar-graph formats.”

Energy reduction incentive details for FY10 are not fully determined yet, but perhaps beginning in FY11, colleges may be allocated their own funds to budget and pay for the energy consumption directly. Auxiliary systems such as Assembly Hall, the Illini Union and Housing Division already pay their own energy costs.
Some aspects of birding not always environmentally friendly

By Melissa Mitchell
News Editor

Once upon a trash heap dreary, while he wandered, weak and weary, UI English professor and birding enthusiast Spencer Schaffner raised his binoculars, focused and had a eureka moment.

In his sights, not a raven, nor even the Tamaulipas crow, a once-common inhabitant of the Brownsville, Texas, city dump. Rather, Schaffner identified the rarely spotted fowl irony.

The UI professor, who also watches and studies bird-watchers, suggests that the popular pastime known as competitive birding – that is, participation in various types of activities based around the goal of identifying and/or listing the greatest number of avian species – may not be as eco-friendly as it purports to be.

Schaffner makes his case in an essay titled “Environmental Sporting: Birding at Superfund Sites, Landfills and Sewage Ponds.” The essay appears in the August issue of the Journal of Sport & Social Issues.

“This article describes birding as an example of what I call environmental sporting, an ostensibly green category of sport that relies on both environmental protection and degradation,” he notes in the essay’s abstract.

In the article, Schaffner considers three forms of competitive birding that typically entail excursions to polluted landscapes:

- the World Series of Birding, which takes place each May near Environmental Protection Agency Superfund sites in New Jersey and is sponsored by the state’s Audubon Society.
- “big-year birding,” which typically includes visits to landfills in an effort to track the greatest number of species in a defined region over the course of a year.
- the practice known as listing, or maintaining an ongoing list of sighted species, including those that populate sewage ponds.

Schaffner notes that competitive birding became popular in the United States in the 1950s, evolving out of what he calls the “automotive-hobby culture,” in which enthusiasts were motivated as much by their sense of adventure and ready access to large sedans and cheap gas as they were by an interest in tracking their feathered friends.

“Part of the thrill was driving around the country in automobiles,” Schaffner said. “Competitive birders log many hours in their cars. Some even fly to spot a single species of bird.”

However, competitive birding was a direct outgrowth of the more genteel pastime of bird-watching, which Schaffner said dates to the late 19th century.

“There’s a long history of strong connections between bird-watching – even competitive birding – and environmentalism and the protection of bird species,” he said. “Bird-watching was invented or mass-marketed with the invention of field guides as a way to end the plume trade and save birds at the end of the 19th century.”

Schaffner said an association with “green” philosophies and a commitment to conservation continues today in many bird-watching and birding circles.

“There’s still an ongoing tradition of bird-watching that’s very connected to larger ecosystems and the environment. Many bird-watchers are not just looking at birds, but paying attention to everything, including climate change and all aspects of ecology.

“But specifically, with these competitive birding practices like the World Series of birding, or some forms of the listing, there’s this kind of contradictory discounting of that larger environmentalist ethic.”

See BIRDING, PAGE 8

Ad removed for online version
Web Services introduces new Web tools, service upgrades

By Sharita Forrest
Assistant Editor

A spiring writers around campus who are yearning to share their thoughts or expertise with the on-line world now have a quick and easy way to start with the new blog service offered by Web Services.

Released Aug. 10, the blog service is the newest tool in Web Services’ suite of online tools, which are available free to UI students and faculty and staff members at all three campuses. The toolbox also includes surveys, calendars, forms, e-newsletters, discussion boards, text messaging and other online services that help users accomplish their Web and communication responsibilities.

The blog service and other enhancements have been under development for about a year and a half. As with the other tools in Web Services’ toolbox, creating a blog is simple: The user is guided through the setup process by filling in several fields. Bloggers also can choose whether to display their blogs in a campus blog directory.

Among the enhancements that Web Services has made is statistical tracking, which allows users to track data such as the number of subscribers, viewers and comments on their calendars, discussion boards and blogs.

“This is really valuable because you can tell what people are interested in and don’t have to go digging through reports to get that information,” said Lance Campbell, software architect for Web Services. “The counts are refreshed every 10 minutes.”

Additionally, a subscription service is available now for discussion boards and blogs, so readers can choose to be notified by e-mail when new topics are posted to a discussion board or blog to which they’ve subscribed.

Another new feature that users will find helpful is the tabs in the toolbox. Users can see blogs, surveys, forms and other content that they have created, and can tab over to view content created within their units and the names of the colleagues who manage it. This prevents content from being lost as people leave or move to other jobs.

Also, the help function has been refined, so it is now available for all tools and on every screen. Because the help function is embedded in each page, it provides context-sensitive assistance without taking the user to a different screen.

Web Services worked with Jon Gundersen, coordinator of assistive communication and information technology accessibility in the Division of Disability Resources and Educational Services, to ensure that all forms and surveys meet accessibility standards and best practices for people with disabilities.

Web Services offers free training on its tools and has FAQs online to assist users with common questions. In addition to workshops, Web Services also offers consulting to departments and colleges.

Tool time
Lance Campbell, software architect for Web Services, leads a workshop for staff members on enhancements to Web Services’ suite of online tools. Web Services recently added a blog service to the toolbox, which also includes calendars, forms, e-newsletters, discussion boards and text messaging, among other online services. The tools are available free to all students and faculty and staff members at the three UI campuses.

BIRDING, CONTINUED FROM PAGE 7

Nonetheless, he added, “it’s not a simple thesis to say, ‘Birding has gone wrong.’”

“But what I would say is that we tend to think getting out there in the outdoors and doing things that I’m calling environmental sport is part of saving the planet. It’s considered part of being green and caring about nature.”

The rub, he said, is that “a lot of the environments we do that in are altered, manufactured, human-modified places. And a lot of the stuff we do isn’t necessarily in the best environments we do that in are altered, manufactured, human-modified places. And a lot of the stuff we do isn’t necessarily in the best environments that lurk below the surface.”

One such human-modified spot popular among birders is the Montlake Landfill in Seattle. The landfill isn’t any longer active; several years ago, it was covered with a thin layer of top soil and officially renamed the Union Bay Natural Area. Although it now looks and functions like an average city park, Schaffner said the fill “poses significant dangers to the environment of (the adjacent) Lake Washington … in the form of lateral peat movement, and toxic leachate has surfaced as an ongoing concern.”

Sewage ponds, another frequent birding destination, also tend to be saturated with toxins.

“Sludge at sewage treatment plants is a problem that not many people know about,” Schaffner said. “It seems like a really great solution. We used to dump our sewage in lakes and rivers. Now we treat it and put it on our fields and use it to grow food. It sounds perfect, but unfortunately, a lot of that sludge has residues from industrial sites and hospitals.”

As a result, the recycled waste is laced with toxic chemicals and heavy metals, he said.

“Because many of the birds found at these sites may appear to be unaffected by the toxins – in part, Schaffner believes, because some may just be passing through on migration routes – birders obsessed with tracking and listing tend to ignore the darker side of those environments that lurk below the surface.”

“So, these forms of competitive birding have this way, I think, of keeping the whole system moving and helping us to think, ‘Oh, you know what? … The EPA is doing a great job, and sewage treatment is better than what we used to have. And I’m glad this landfill is covered over and it looks like a park now.’”

“But by going there, it’s a way of making light of what are some serious environmental concerns.”

In addition, he said, activities such as the World Series of Birding come across as environmentally friendly events because participants raise money for ecologically minded organizations. However, the event receives generous sponsorships from corporations ranging from binocular manufacturer to power companies. Ironically, many of these corporate sponsors are also major polluters, he said.

“I think there could be more activist, environmentalist instantiations of the sport of birding.”
Plastics chemical retards function of adult reproductive cells

By Diana Yates
Life Sciences Editor

Bisphenol A, a chemical widely used in plastics and known to cause reproductive problems in the offspring of pregnant mice exposed to it, also has been found to retard the growth of follicles of adult mice and hinder their production of steroid hormones, researchers report.

Their study is the first to show that chronic exposure to low doses of BPA can impair the growth and function of adult reproductive cells. The researchers described their findings at the annual meeting of the Society for the Study of Reproduction in July.

A healthy, mature follicle, called an antral follicle, includes a single egg cell surrounded by layers of cells and fluid which support the egg and produce steroid hormones, said UI veterinary biosciences professor Jodi Flaws, who led the study with graduate student Jackye Peretz.

“These are the only follicles that are capable of ovulating and so if they don’t grow properly they’re not going to ovulate and there could be fertility issues,” Flaws said. “These follicles also make sex steroid hormones, and so if they don’t grow properly you’re not going to get proper amounts of these hormones.” Such hormones are essential for reproduction, she said, “but they’re also required for healthy bones, a healthy heart and a healthy mood.”

BPA is widely used in plastics and is a common component of food containers and baby bottles. The chemical structure of BPA is similar to that of estradiol, a key steroid hormone, and it can bind to estrogen receptors on the surface of some cells. It is not known whether BPA blocks, mimics or enhances estrogen’s activity on these cells, Flaws said.

Human studies have found BPA in many tissues and fluids, including urine, blood, breast milk, the amniotic fluid of pregnant women and the antral fluid of mature follicles. A national survey conducted by the federal Centers for Disease Control and Prevention in 2003-2004 found BPA in 93 percent of the 2,517 people (age 6 and up) who were tested.

BPA has a short half-life, Peretz said, and the chemical is quickly eliminated from the body. The fact that so many people tested positive “probably means that we’re being constantly exposed to BPA,” she said. The new study found that follicle growth was impaired after 48 hours of exposure to BPA, Peretz said. Reductions in three key steroid hormones – progesterone, testosterone and estradiol – were also seen after 120 hours of exposure to BPA.

The drop in steroid hormone production was quite dramatic. After 120 hours in a medium that included 10 micrograms per milliliter of BPA, mouse follicle cells produced about 85 percent less estradiol, 97 percent less progesterone and 95 percent less testosterone. Lower doses of BPA had a less dramatic – but still considerable – dampening effect on steroid hormone levels. And at 120 hours, follicle cells grown in the BPA medium were 25 percent smaller than normal, the researchers report.

A review of the health risks of BPA by the National Toxicology Program of the U.S. Department of Health and Human Services concluded in 2008 that while BPA has been shown to harm the reproductive health of laboratory animals in some studies, such adverse effects “are observed at levels of exposure that far exceed those encountered by humans.”

However, the NTP reported that laboratory studies that showed effects in animals exposed to low doses of BPA led it to have “some concern for effects on the brain, behavior and prostate gland in fetuses, infants and children at current human exposures to bisphenol A.”

The new study points to possible concerns in adults as well, Flaws said. “I think there’s a need for more studies where people look in adult humans to see if BPA is affecting follicle growth and steroid hormone levels,” she said. If it is, that might help explain some infertility or menopausal symptoms, she said.

Chronic exposure
Veterinary biosciences professor Jodi Flaws and her colleagues found that mouse follicle cells that were exposed to bisphenol A (BPA), a chemical found in many plastics, produced lower levels of steroid hormones than other cells.
A new process for creating ultra-thin, small, inorganic light-emitting diodes (LEDs) and assembling them into large arrays offers new classes of lighting and display systems with interesting properties, such as see-through construction and mechanical flexibility, that would be impossible to achieve with existing technologies.

Applications for the arrays, which can be printed onto flat or flexible substrates ranging from glass to plastic and rubber, include general illumination, high-resolution theater displays, wearable health monitors, and biomedical imaging devices.

"By printing large arrays of ultrathin, ultrasmall inorganic LEDs and interconnecting them using thin-film processing, we can create general lighting and high-resolution display systems that otherwise could not be based in silicon wafer technology," said John Rogers, the Flory-Founder Chair Professor of Materials Science and Engineering at the UI. Rogers and collaborators at the UI, Northwestern University, the Institute of High Performance Computing in Singapore and Tsinghua University in Beijing described their work in the Aug. 21 issue of the journal Science.

Compared to organic LEDs, inorganic LEDs are brighter, more robust, and exceptionally thin. Organic LEDs, however, are attractive because they can be formed on flexible substrates, in dense, interconnected arrays. This "obviates some of the advantages of organic LED technology with the scalability, ease of processing and resolution of organic LEDs," said John Rogers, the Flory-Founder Chair Professor of Materials Science and Engineering at the UI. Rogers and collaborators at the UI, Northwestern University, the Institute of High Performance Computing in Singapore and Tsinghua University in Beijing described their work in the Aug. 21 issue of the journal Science.

"The stamping process provides a much faster alternative to the standard robotic 'pick and place' process that manipulates inorganic LEDs one at a time," Rogers said. "The new approach can lift large numbers of small, thin LEDs from the wafer in one step, and then print them onto a substrate in another step."

By shifting position and repeating the stamping process, LEDs can be transferred to other locations on the same substrate. In this fashion, large light panels and displays can be crafted from small LEDs made in dense arrays on a single, comparatively small wafer. And, because the LEDs can be placed far apart and still provide sufficient light output, the panels and displays can be nearly transparent. The thin device geometries allow the use of thin-film processing methods, rather than wire bonding, for interconnects.

In addition to solid-state lighting, instrument panels and display systems, flexible and even stretchable sheets of printed LEDs can be achieved, with potential use in the health-care industry.

"Wrapping a stretchable sheet of tiny LEDs around the human body offers interesting opportunities in biomedicine and biotechnology," Rogers said, "including applications in health monitoring, diagnostics and imaging."

The work relied critically on broad, collaborative efforts at the UI. In addition to Rogers, the efforts included electrical and computer engineering professors Xiuling Li, an expert in epitaxial growth, and Kent Choquette, a leader in semiconductor optoelectronics. Mechanical science and engineering professor Placid Ferreira developed the printing-based manufacturing tools. Theoretical collaborators at Northwestern University, led by professor Yinggang Huang, and at Tsinghua University, under the guidance of Yonggang’s father, professor Keh-chih Huang, supported the project through calculations of mechanical strains in the flexible and stretchable systems. Researchers at the Institute for High Performance Computing in Singapore provided finite-element studies of the same systems.

"This sort of broadly interdisciplinary, integrated effort was essential for a successful outcome," Rogers said. "It would be extremely difficult to replicate this type of project at any place other than at the UI."

Rogers is affiliated with the Beckman Institute, the department of mechanical science and engineering, the Frederick Seitz Materials Research Laboratory, and the Micro and Nanotechnology Laboratory. Ford Motor Co., the National Science Foundation and the U.S. Department of Energy funded the work.

**Ultrathin LEDs create new classes of lighting, display systems**

**By James E. Kloeppel**

Physical Sciences Editor

PAGE 10

# Ultrathin LEDs create new classes of lighting, display systems

**Mechanical flexibility** Stretchable micro-LED display, consisting of an interconnected mesh of printed micro LEDs bonded to a rubber substrate.

**Transparent micro-LED display, placed in front of university logo pattern.**

**Array of ultrathin, micro-LEDs (black squares) printed onto a plate of glass, with a university logo pattern in the background.**

**Microscope image of an ultrathin, micro-LED (red) in a suspended, ‘diving board’ layout, released along its bottom surface from the growth wafer (grey), but held in place with polymer ‘anchor’ structures (blue) at the two back corners.**

**Array of micro-LEDs (black squares) printed onto a sheet of plastic, wrapped around a finger.**

Photos by D. Stevenson and C. Conway, Beckman Institute
**Over time, an invasive plant loses its toxic edge**

By Diana Yates
Life Sciences Editor

In the summer, garlic mustard produces glucosinolates, pungent compounds that leach into the soil and kill off many soil fungi, especially those native to North America. This weakens the native plants. As a result, garlic mustard, which grows in dense clumps in many North American woodlands, its preferred habitat. Those patches are often dominated by garlic mustard. (Thus the planning that is under way for a yearlong centennial celebration in 2011.) A third museum, focusing on the American culture, which then opened the following year. (Thus the planning that is under way for a yearlong centennial celebration in 2011.)

When you’re in a situation where the only thing you’re competing with is another garlic mustard, it may be that making lots of this chemical is not a very good idea,” he said. Thanks to a study of historic herbarium records conducted by co-author Victoria Nuñez, of Natural Areas Consultants, N.Y., the researchers had access to a 140-year record of the age of garlic mustard populations across the eastern half of the U.S. The team found that in northern Illinois, where garlic mustard had spread farthest, locations grew them in a greenhouse and tested glucosinolate levels in each. Those tests found that older populations — those that have been in an area for more than 30 years — produced lower levels of the functional glaucosinolates than those that got their start in the spring two decades ago, Lankau said.

Genetic studies suggested that these patterns were the result of natural selection. Therefore, the plants that produced less of the toxin were more likely to survive and reproduce in older populations.

The researchers then grew garlic mus- tard in soil from native woodlands. After a time, they removed these plants and kept new plant species in the same soil. The trees did best in pots that had held plants from older populations of garlic mustard, indicating, again, that the plants’ toxin output had diminished over time, killing less of the fun- gues on which the native plants relied.

To determine if the decline in glucosino- late production was allowing native plants to return to areas previously dominated by garlic mustard in the wild, the researchers turned to a unique data set available in Illinois. The Critical Trends Assessment Program (CTAP) is a long-term initiative funded by the Illinois Department of Natural Resources and administered by the INHS that monitors the status of plants, birds and insects across the state every five years. The CTAP began in 1997, and so data from the first two sampling periods were used (1997-2001 and 2002-2007). Because CTAP includes data on plant abundance, including garlic mustard and native plants from across the state, the researchers were able to determine if native plants were declining or advancing in the presence of garlic mustard. Again, they found that older populations of garlic mus- tard — though still problematic — posed less of a threat to native plants than newer ones. While this study focused on only one plant, the results indicate that some inva- sive plants evolve in ways that may make them more manageable over time, Spyreas said. This suggests that conservation efforts might be more effective if they focus on the most recently invaded areas, which — in the case of garlic mustard, at least — is probably where the most damage occurs.

This study was funded by the Agriculture and Food Research Initiative at the U.S. Department of Agriculture and by the Illi- nois Department of Natural Resources. The research team also included Adam Davis, of the Agricultural Research Service at the USDA.

**Kudos**

The Spurlock Museum recently received accreditation from the American Association of Museums, the highest national recognition for a museum. Established in 1911 in the cramped quarters of Lincoln Hall’s attic, the museum’s collections have grown to 43,000 artifacts. A yearlong centennial celebration is being planned. Twenty-four other museums in Illinois have received accreditation, half of those in Chicago. Among the handful downtown are the Kranert Art Museum, also on campus, and the Early American Museum in Ma- homet. According to Pitard, the now-named Spurlock Museum as its roots to 1911, when the university’s board of trustees ap- proved the establishment of two museums, one for classical studies and one for Euro- peanized, which has become the follow- ing year. In the summer because of the heat.

“...”The accreditation is a real tribute to the museum,” said Pitard, who is a professor in the Program for the Study of Religion at Illinois. “We’re really proud of this.”

According to the AAM, the accreditation recognizes a museum “for its commitment to excellence in all that it does: governance, collection stewardship, public programs, financial stability, high professional stan- dards and continued institutional improve- ment.”

In other words, the museum is being rec- ognized for doing everything well, Pitard said. “Accreditation really gives you a cred- itability in the museum community. It makes it more likely that you can bring in higher- quality visiting exhibits. It gives us more of a say in the development of standards with- in the museum community. It simply makes us much more visible around the state and the country.”
Study: Financial windfalls hasten early retirement

By Phil Ciciora
News Editor
The Illinois State Geological Survey has been awarded nearly $995,000 over the next three years by the U.S. Department of Energy to create the Midwest Geological Sequestration Consortium Technology Training Center at the Urbana campus of the UI.

The ISGS was one of seven recipients of funding announced recently by the Department of Energy to create the Advanced Energy Technology Initiative.

The training center will benefit the Illinois Basin region by providing curriculum, outreach and networking for carbon sequestration technology development, says Salie E. Greenberg, assistant director of the Advanced Energy Technology Initiative.

“We are very excited to launch the Midwest Geological Sequestration Consortium Technology Transfer Center, which integrates ongoing ISGS carbon capture and storage research with learning opportunities for the University of Illinois academic community, professionals and industry throughout the Midwest and the nation,” Greenberg said. “Our goal is to make the University of Illinois a leader in geologic sequestration education by engaging learners through our scientific research.”

Founded in its modern form in 1905, the ISGS is the largest of the 50 state geological surveys in the nation. With research focused on energy resources and on three-dimensional geological mapping, the ISGS is a major research contributor to the national and international drive to control carbon dioxide emissions.

The four state scientific surveys – the Illinois State Geological Survey, the Illinois Natural History Survey, the Illinois Sustainable Technology Center, and the Illinois State Water Survey – comprise the Institute of Natural Resource Sustainability, brought under the auspices of the UI last year.

The Midwest Geological Sequestration Consortium was established in 2003 to study geologic sequestration potential in the Illinois Basin region and is currently leading a large-scale sequestration project in Decatur, Ill.
UI economist to address global warming conference

By Jan Dennis
Business & Law Editor

A UI environmental policy expert will outline the economic impact of pollution regulations at a meeting of European Union finance ministers that will be a springboard for upcoming negotiations on a new international treaty to combat global warming.

Don Fullerton, a finance professor and former deputy assistant secretary of the U.S. Treasury Department, is the lone academic expert invited to speak about climate policy at the 27-nation alliance’s Oct. 2 conference in Gothenburg, Sweden.

Two of Europe’s top government tax and finance officials also are scheduled to discuss cost-effective options to reduce carbon emissions as the EU gears up for December talks in Copenhagen on a new United Nations-brokered climate treaty to replace the 1997 Kyoto protocol, which expires in 2012.

“They’re looking for economic expertise on all of their various options as they stake out a position for Copenhagen,” said Fullerton, who heads the environmental and policy expert will outline the economic impact of pollution regulations at a meeting of European Union finance ministers that will be a springboard for upcoming negotiations on a new international treaty to combat global warming.

Don Fullerton, a finance professor and former deputy assistant secretary of the U.S. Treasury Department, is the lone academic expert invited to speak about climate policy at the 27-nation alliance’s Oct. 2 conference in Gothenburg, Sweden. And the academic community.

He supports cap-and-trade systems to reduce carbon emissions, rather than imposing a tax on pollution or issuing mandates that force companies to enact specific climate-friendly measures such as coal scrubbers or switching from coal to low-carbon natural gas or no-carbon wind or solar power. But government should set limits on the carbon gases that companies spew into the atmosphere, said Fullerton, a researcher with the UI Institute of Environmental and Public Affairs.

“Giving away permits is like handing companies free profits,” he said. “Under cap-and-trade, firms that cut emissions beyond their limit can sell excess permits to other companies. And setting a price for carbon is likely to raise the cost of output, so even using the free permits creates profits because those companies will sell at a higher price and not bear the cost of reducing their own emissions.”

Selling permits would provide money that could be used for government programs such as health reform or to trim corporate taxes to encourage investment and job creation, Fullerton said.

“Handing corporations permits is free money and it has no impact on their behavior except their profits go up,” Fullerton said. “A permit price increases costs for businesses, who then pass those costs along to consumers. So businesses will adjust their behavior by reducing emissions and consumers will adjust their behavior by turning off lights, insulating their homes better or buying more efficient appliances.”

The EU implemented a cap-and-trade system with free permits after joining the Kyoto protocol, but plans to auction them off in its next round of emissions cuts. In the U.S., which helped negotiate the Kyoto climate treaty but never signed on because the Senate failed to ratify it, Congress is considering a bill that would initially give away about 80 percent of permits, giving industries time to transition to the carbon restraints. The Office of Management and Budget estimates government would raise $627 billion between 2012 and 2019 if all permits were auctioned.

“I think it’s pretty dumb to hand out free money to corporations, especially with government strapped for cash already,” Fullerton said. “Why should we be handing profits to firms that are already profitable? We should be collecting money to cut the deficit or cut taxes or provide health care.”

He warns that cap-and-trade systems increase prices for electricity and gasoline, with economic effects similar to a regressive tax because those costs then comprise a much higher percentage of household spending for low-income families than for high-wage earners.

Fullerton says cap-and-trade systems that charge for permits would have revenue for programs to ease the impact on the poor, such as tax credits or payroll tax reductions. But he cautions that government should avoid tying relief directly to the cost of electricity and gasoline.

“You don’t want to reduce the price of electricity or gasoline because that would undercut the pollution-reducing effects,” he said. “Higher prices are part of the incentive to cut back on use, and we want low-income people to cut back just like everyone else.”

Climate policy Don Fullerton, a UI finance professor and former deputy assistant secretary of the U.S. Treasury Department, is the lone academic expert invited to speak about climate policy at the European Union’s Oct. 2 conference in Gothenburg, Sweden.
brief notes

International Insight
Scholar brings European insight to UI
An adviser to the Cyprus government in United Nations negotiations for the 2004 Annan Plan will visit the UI campus Sept. 9 and 10 to present two lectures.

Van Coufoudakis, rector emeritus at the University of Nicosia, Cyprus, and dean emeritus of the School of Arts and Sciences at Indiana University-Purdue University at Fort Wayne, focuses his research on politics and foreign policies of Greece, Turkey and Cyprus, as well as on post-World War II U.S. foreign and defense policy with particular emphasis on the Eastern Mediterranean, the Middle East and Southeastern Europe. His most recent book is titled “International Aggression and Violations of Human Rights: The Case of Turkey in Cyprus.”

On Sept. 9, Coufoudakis will discuss “The Cyprus Problem: The Destruction of Cypriot Cultural Heritage” at 6 p.m. in the Krannert Art Museum auditorium. His second talk, at 6 p.m. Sept. 10 in 269 Everitt Lab, is titled “The Cyprus Problem: the EU and the European Convention of Human Rights.”

Coufoudakis’ visit is sponsored by the Hellenic Students Association, European Union Center, Modern Greek Studies program, department of political science, Cline Center for Democracy, Russian, East-European and Eurasian Center; and Center for South Asian and Middle Eastern Studies.

Certificate of Merit
Dads Association seeks nominations
The Dads Association is seeking nominations for its annual Certificate of Merit awards. The awards recognize the outstanding achievements and contributions of faculty and staff members, students and student organizations.

The recipients will receive a cash award, a small gift from the Dads Association, and will be recognized at the Dads Association’s Annual Banquet on Nov. 13. Online nomination forms are available at www.uiuc parentprograms.uiuc.edu/dads/dads_nominations.htm. All nominations must include two letters of support.

Compete nominations are due to the University of Illinois Parent Programs Office by noon Sept. 18. For more information, contact Becki Galardy at galardy@illinois.edu or 333-7655.

Archaeological Institute of America
Fall lectures begin Sept. 10
The Archaeological Institute of America will host several campus lectures this fall.

Nancy Sultan, a professor of modern and classical languages and literature at Illinois Wesleyan University, will give a lecture, “Jacqueline Kennedy and the Classical Ideal,” at 4 p.m. Sept. 10 in Room 62 Krannert Art Museum.

Helena W. Swiny, of the Semitic Museum at Harvard University, will present “Ready for a Journey: Outfitting an Ancient Merchant Shop” at 5:30 p.m. Oct. 1 in Room 302 Architecture.

John Senseney, a UI professor of architecture, will speak about “Painting and Spectacle in Classical Athens” at 5:30 p.m. Nov. 5 in Room 62 Krannert Art Museum.

In addition, Joseph Gally of the Illinois Transportation Archaeological Research Program will present “Searching for Brooklyn’s Freedom Village: A Free Black Settlement in Lincoln’s Illinois” at 5:30 p.m. Dec. 3 in Room 62 Krannert Art Museum.

All lectures are open to the public. The lecture series is sponsored by the Archaeological Institute of America, the department of the classics and the Krannert Art Museum.

Sweet studies
The making of artificial sweeteners
Carolyne de la Peña, director of the American Studies Program at the University of California at Davis will speak about the ways gender and power influenced the making of artificial sweeteners between 1945 and 1980 in the U.S.

Her talk, “Saccharin: Gender and Power in the Making and Marketing of Artificial Sweetener,” is free and open to the public and will take place at 4 p.m. Sept. 10 in the Knight Auditorium of the Spurlock Museum.

These women bridged invention and consumer, and we can learn from it.”

Green earned a master of library science degree from the UI in 1960, spent more than a decade as a teacher and librarian at the Institute of Labor and Industrial Relations. He later earned a doctorate in folklore from the University of Pennsylvania and taught at the University of Texas and the University of Louisville.

He wrote dozens of articles and books, including “Only a Miner,” a study of coal mining songs that launched a “Music in American Life” series published by UI Press, one of the University of Illinois Press.

In 1995, he received the American Folklore Society’s Benjamin A. Botkin Prize for outstanding achievement in public folklore and earned the Living Legend Award from the Library of Congress in 2007.

Folklore icon Archie Green remembered, celebrated
Archie Green, UI instructor, union activist and folklorist, sits next to a figure of Lorado Taft’s Sons and Daughters of Decewistan and Pyrshk, in front of the Foellinger Auditorium on campus. (even April 1972)
A new WILL-TV production, "Red Grange Remembers," pays tribute to the man that changed college and professional football forever. The program, which will be broadcast at 7 p.m. Sept. 8, features never-before-broadcast portions of Grange’s last significant video interview interspersed with photos and film of his career. Included is new footage of Kemper Peacock, the man who interviewed Grange in 1982, describing their interaction and how Grange was such a powerful presence that he seemed to climb "through the camera."

Before Grange came along, professional football was essentially a club sport, Peacock said. Grange helped draw the crowds to turn it into a spectator sport. "I realized this was an individual who, perhaps more than any other, had an enormous influence on college football and professional football, and led a historic life," said Peacock, a sports producer who interviewed Grange. "We’re going to have one of the greatest college football players of all time."

In the program produced by Denise La Grassa, and co-produced and hosted by John Paul, Grange talks about how he handled his lifelong status as a sports hero, his relationships with Ty Cobb, Jack Dempsey, Babe Ruth and other sports figures; why he was superstitious about the number 77; how he would loaf in practice but get fired up for games; why Quack was his true sports passion; why he wasn’t a good coach, and how professions in football evolved.

La Grassa discovered the existence of the interview tapes when working on the WILL-TV documentary, "Memorial Stadium: True Illini Spirit," about the history of the football stadium at the UI. Following "Red Grange Remembers," WILL presents "文物保护" and "Preserving the Past," the story of the football stadium at the UI.

"Memorial Stadium: True Illini Spirit," airing at 8:15 p.m., and an encore of "Memorial Stadium: True Illini Spirit" at 9 p.m.

"Red Grange Remembers" is made possible by a grant from the Mid-Central Illinois Regional Council of Carpenters. Additional funding was provided by Ronald Filler, Charles Funn and Robert O. Endres.
common ground is their curiosity, their zest for science, and their ability to communicate with nonspecialists.’

The first week’s speaker is Dale J. Van Harlingen, a professor and head of the department of physics, who will discuss superconductivity.

Although designed primarily for high school students, the free program is open to the public. A question-and-answer session will be held after each lecture. The talks will be held at 10:15 a.m. Saturdays in Room 141, Loomis Laboratory of Physics. Free parking is available on the east side of the building in Lot B-21. More information is available from program coordinator Toni Pitts at ttpitts@illinois.edu.

International Programs and Studies
Award nominations due Sept. 30
Nominations are now being accepted for the 2009 International Achievement Awards, which recognize outstanding international accomplishments of Illinois-affiliated individuals.

Awards include the Madhuri and Jagdish N. Sheth International Alumni Award for Exceptional Achievement, Distinguished Faculty Award for International Achievement, Charles C. Stewart International Young Humanitarian Award, Illinois International Graduate Achievement Award, and Illinois International Undergraduate Achievement Award.

Award nomination is now a one-step process and the deadline for nominations for all awards will be Sept. 30. Criteria for each award are available online at http://ilint.illinois.edu/awards. Nominations forms and more information also is available from International Programs and Studies, int-eng-prot@illinois.edu or 265-4140.

Office of Public Engagement
Nominations accepted for awards
Nominations are invited for the 2009-10 Campus Awards for Excellence in Public Engagement to recognize those faculty members, academic professionals, students and public engagement projects that engage the public to address critical societal issues.

Each faculty member or academic professional award winner will receive a $1,500 cash award and a $1,500 permanent salary increase. In the student category, up to two $1,500 cash awards will be given to undergraduate, graduate or graduate students.

One Project CAEPE Award will be presented to recognize outstanding contributions uniquely accomplished through a team effort. The award will carry a $5,000 contribution to the sponsoring unit intended to support or enhance the project.

All faculty members, instructors, academic professionals, graduate and undergraduate students who have demonstrated significant individual contributions to the world, nation, state or community through distinguished university public engagement are eligible for these awards.

Nominations are due to the Office of Public Engagement by 5 p.m. Oct. 5. Finalists will be asked for letters of reference and their names will be notified in December. For nomination forms and more information, contact Nathanial C. Banks at nbankes@illinois.edu

50th anniversary celebration
Advertising symposium is Sept. 25-26
Advertising, marketing and digital media will be among the topics for the Sandage Symposium 2009, being held Sept. 25-26 at the IHotel and Conference Center, 1900 S. First St., Champaign.

Named in honor of Charles Sandage, who founded the department of advertising at Illinois in 1959, the symposium kicks off the department’s 50th anniversary celebration.

The event will open Friday evening with a student expo and reception, followed by a full schedule of panels and speakers on Saturday. Among the topics at Saturday’s sessions: the current state of Chicago-based advertising; the future of advertising, branding, consumer-generated digital content; and consumer privacy issues in digital advertising.

The day will wrap up with a reception and a 50th anniversary dinner. The cost of the symposium, including dinner, is $175. The cost of the dinner alone is $100. Additional details and links to registration can be found at www.media.illinois.edu/advertising.

Peoples' Tunes, an emeritus professor of mathematics, was named a fellow of the Society for Industrial and Applied Mathematics. Fellow status is awarded to members who have made significant contributions to the mathematical and computational sciences in the areas of research, teaching or public policy. Tondeur was named for his leadership in science policy.
calendars of events

**Sept 3 - 20**

- **Monday, Sept 7**
  - **10 a.m.** Rush University Medical Center. Regulatory Thin Films as Nanofabrication Targets.

- **Tuesday, Sept 8**
  - **10 a.m.** Biological and Chemical Engineering Students: Working Together to Solve Local Engineering Students: Work Together to Solve Local Engineering Problems in South Africa.
  - **3 p.m.** Beckman Institute. Chemical and Bioimaging With Plasmons, Microscopy and Imaging.

- **Wednesday, Sept 9**
  - **3 p.m.** Beckman Institute. Chemical and Bioimaging With Plasmons, Microscopy and Imaging.

- **Thursday, Sept 10**
  - **3 a.m.** University of Illinois. Department of Biological Sciences.
  - **9 a.m.** Beckman Institute. Chemical and Bioimaging With Plasmons, Microscopy and Imaging.

- **Friday, Sept 11**
  - **9 a.m.** Beckman Institute. Chemical and Bioimaging With Plasmons, Microscopy and Imaging.
CALENDAR, CONTINUED FROM PAGE 17

School of Music

5 Saturday
Allerton Music Barn Festival

6 Sunday
Allerton Music Barn Festival
Bach Cantatas. 10 a.m. Bothen, piano. 8:30 p.m. Al-
leron Music Barn, Monticello. Ill. More info: www.allerton-

7 Monday
Allerton Music Barn Festi-
val. The West Coast Sound. 10 a.m. The Great American
Storybook. 8:30 p.m. Allerton Music Barn, Monticello. Ill. More info: www.allertomon-
sicbarn.com. $

10 Thursday
ELLNORA: The Guitar Fes-
tival Opening Night Party. 7 p.m. Lobby and amphithe-
ter. Krannert Center. $

11 Friday
ELLNORA: The Guitar Festival
Pandit Debashish Bhattacha-
rya. 9 a.m. Lobby, Krannert Center. $

11 Friday
ELLNORA: The Guitar Festival
Morning and Evening Ragas. 7 a.m. Foellinger Great Hall, Krannert Center.

12 Saturday
ELLNORA: The Guitar Festival Morning and Evening Ragas. Pandit Debashish Bhattacharya. 9 a.m. Lobby, Krannert Center. $

17 Thursday
Pygmalion Music Festival. My Brightest Diamond. 6 p.m. Link Gallery. Krannert Art Mu-
seum.

18 Friday
Women’s Volleyball. State
Farm Illini Classic. UI vs. St. Louis University. 4:30 p.m. Huff Hall.

19 Saturday
Pygmalion Music Festival. Iron and Wine with Opening Act The Books. 7:30 p.m. Try-
on Festival Theatre, Krannert Center.

23 Tuesday
“Infusion” Through Sept. 4. Works by Ruim Shanghl. Asian American Cultural Center, 1210 W. Nevada St., Urbana. Weekdays 8:30 a.m.-3 p.m.

24 Wednesday
American Indian Studies and
Native American House Open
House. 4 p.m. 1204 and 1206
Kinkead Pavilion. 9 a.m.-5
p.m. Saturday; Noon-4 p.m.
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GLACIERS, CONTINUED FROM PAGE 1

on current climate changes. They know that ice ages and glacial retreats are common because these events leave indelible marks on the land.

To a geologist’s eye, the color of rock layers, the pattern of scars on its surface or fissures at its edges, the shape of a mound of gravel left behind or the pattern of snow and ice on its surface speaks volumes about the glacier’s origin, recent history and age.

Glaciers are perpetually moving, flowing over rivers, and over rivers, they churn up dirt and rocks and carry them “downstream.” When a glacier retreats, the mud and rocks are often dumped at its edge, forming moraines. The moraines sometimes grow so large that they inhibit the advance of the glacier, and cause it to thicken, like a living thing.

The surface of the rocks also tells a story. When a glacier melts, the newly exposed rock becomes an inviting habitat for lichen and other organisms, which gradually darken the stone. Such growth can take 50 or 60 years to start, however, so bare rock inside the moraine signals that a glacier has retreated only within the last few decades. Shilts calls the light-colored moraine below the lichen-covered rock the glacier’s “bathtub ring.”

“1948 was the year that the first aerial photographs were taken of Bylot Island and most of northern Canada,” Shilts said. “On those photographs you can see that the glaciers were considerably advanced over what they are now. And any boulders that were involved with glacier activities in the 1940s as they have been in the last 55,000 years. And now they are retreating,” he said.

“Another approach, called cosmogenic dating, indicated that the boulders just outside the 1948 moraine were even older. The technique, conducted by Shilts’ former graduate student, Shirley McCuaig, dated those boulders at 55,000 years, plus or minus 5,000 years. That finding confirmed something that another student, Rod Klassen, had suggested in his PhD thesis at Illinois, Shilts said. “And that is that the glaciers that are now in Bylot Island were far advanced in the 1940s as they have been in the last 55,000 years. And now they are retreating.”

“My personal opinion is that this is a natural effect, and sorting out those two is a very clear demarcation on the ground.”

Shilts photographed many of the same glaciers in the 1980s and 1990s, and other geologists have chronicled the changes up to the present. These photos show a steady and rapid decline in the extent of several glaciers: Stagnation Glacier, covered in a layer of rock and debris, has shrunk considerably since 1948. Nearby Fountain Glacier seems more stable, but the outwash plain below it, a zone always coated in a thick layer of ice, even throughout the summer, was completely dry in the summer of 2008.

Aktineq Glacier has shrunk back about a kilometer since 1948, Shilts said. Most of the other glaciers on Bylot Island, and on Baffin Island, also appear to be melting away.

A glacier that shrinks over a period of decades may seem like an overt sign of a warming climate, but other contributors to glacial retreat are less obviously tied to climate change. Warmer temperatures can bring on more frequent freeze-thaw cycles that open fissures in the rock walls above a glacier, dumping debris on the glacier’s surface that hastens melting by absorbing more of the sun’s heat.

A more precise way of timing glacial events involves dating, indicating that the boulders just outside the 1948 moraine were even older. The technique, conducted by Shilts’ former graduate student, Shirley McCuaig, dated those boulders at 55,000 years, plus or minus 5,000 years.

“My personal opinion is that this is a combination of both factors,” Shilts said. “There’s a normal cycle here – we’re coming out of the ‘Little Ice Age,’ and have been for some time. At the same time, the Industrial Revolution has begun to load the atmosphere with carbon dioxide among other things. There’s a human effect, and there’s a natural effect, and sorting out those two is very difficult.”

Other geologists who have conducted research on Bylot Island include Tristan Irving-Fynn, Rod Klassen, Shirley McCuaig, Brian Moorman, Pablo Wainstein, Ken Whitehead and Christian Zdanowicz.◆

deaths

Richard Brown, 85, died Aug 22 at Meadowbrook Healthcare Center. Brown was a professor of physics and of electrical engineering for 32 years, retiring in 1984. He also was active in the establishment of the department of electrical and computer engineering and was involved in the early studies of teach machines, which led to the PLATO project. Memorials: Urbana Park District Betty C. McMullen, 81, died Aug 4 at the Piatt County Nursing Home. McMullen was an administrative aide for 22 years, retiring from the department of philosophy in 1985.


Memorials: American Battle Monuments Commission, Attn: World War II Memorial, 2300 Clarendon Blvd., Suite 500, Arlington, VA 22201, or the United States Holocaust Memorial Museum, 100 Raoul Wallenberg Place S.W., Washington, D.C. 20024. Memorial The School of Labor and Employment Relations and the Martin Wagner family are holding a celebration of Wagner’s life and long career at Illinois at 10 a.m. Sept. 12 at Smith Music Hall, with an open house to follow at the Wagner Education Center at the school at 12:30 p.m. Wagner, 97, died June 15 at his Urbana home. Wagner was former director and a professor emeritus in the Institute of Labor and Industrial Relations (now the School of Labor and Employment Relations). Memorials: Parkland College Foundation Gloria Valenti Scholl Foundation or the UI Foundation’s Dr. Allan E. Crandell Award. Both awards will be used to support students who demonstrate extraordinary potential to provide compassionate health care.◆