



Liberal Arts & Sciences ILLINOIS

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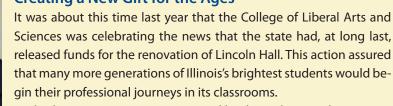
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Creating a New Gift for the Ages



This happy occasion was tempered by the realization that even as this iconic building was being preserved, public higher education itself was changing in dispiriting ways. During the many years that Lincoln Hall bobbed up and down in priority on the list of capital development projects—and for the eight years where no new projects were funded by the state—the deteriorating building came to represent, in many respects, the fragile nature of the University's relationship with the state.

At one time, state support for public higher education was a sure thing. And the main obstacle standing between a bright high school student and his or her attendance at the U of I was his or her ability. The state's significant subsidy kept a college education within reach for the majority of Illinois families. But with tuition rising in an attempt to fill the gap left by the state, access to opportunity—which is the core of U of I's landgrant mission—is now endangered.

In the college we recognize the irony in saving a building while potentially losing the landgrant mission for which it was originally constructed. For that reason, we have created naming opportunities in Lincoln Hall, with all funds raised from them being dedicated to scholarships.

The \$10 million we can potentially raise from this effort will not alleviate all need; however, it will be an impressive start. And through the efforts of the entire University of Illinois and its alumni—who recognize the value of excellent and affordable higher education—we can preserve something else we value, which seems to be slipping from our grasp.

When our campus dedicates the renovated Lincoln Hall on February 12, 2013—100 years to the day of the original dedication—we hope it will become a symbol of a reenergized commitment to the landgrant mission. If so, then Lincoln Hall will truly be, to paraphrase Edwin Stanton's famous pronouncement of Lincoln's legacy, a new gift for the ages.

> Ruth V. Watkins Ruth Watkins, Dean College of Liberal Arts and Sciences

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THE ILLUSION OF SAFETY

HANDS-FREE PHONES ARE JUST AS DISTRACTING

Driving while talking on a cell phone is roughly the equivalent of driving while under the influence of alcohol. But perhaps even more surprising, hands-free cell phones do not make you any safer, says Daniel Simons, an LAS psychology professor who specializes in visual perception.

Simons and his colleague, Christopher Chabris at Union College in New York, have consistently made this point in the wake of legislation in various states, such as a law passed in Washington state this year that bans holding a phone while driving.

"The dangers of driving while talking on the phone come not from our hands or from our eyes, but from our brains," they wrote in *The Seattle Times*. Simons's research backs this up.

In one of his driving experiments at the University of Illinois Beckman Institute, participants drove on a simulator depicting a four-lane, divided highway. Their sole task was to follow the car in front while performing a counting task. In this case, Illinois researchers found that if drivers are distracted while simply following traffic, they instinctively give themselves a little extra space with the car in front.

"This suggests that distractions wouldn't be as bad as long as drivers don't have to make any decisions and provided that nothing unexpected happens," he says.

But unexpected things do happen, and distractions like talking on the phone can make you slower to respond. Problems also arise when drivers have to make a tactical maneuver, such as passing. If drivers are being distracted in these situations, Illinois researchers found that they usually drive too close—dangerously close.

"Making a tactical maneuver requires thought," Simons says. "And when something requires thought, doing other things that require thought—such as talking on a cell phone—impairs your abilities."

He says the physical act of holding a phone is not what limits your abilities. What raises the

risk is the brain's inability to adequately process both tasks—your phone conversation and driving.

But what is the difference between holding a conversation on a hands-free cell phone and talking with a passenger?

Simons identifies three important differences.

phone, meaning that it takes more effort to hear the conversation, and more effort means more distraction. Second, if an unexpected event occurs on the highway, passengers actually provide an added set of eyes; they might even yell "watch out" to alert the driver.

First, the audio qual-

ity is much worse on a cell

"The third reason is the most interesting," Simons says. "The social demands of a cell phone conversation are completely different. If a driver stops talking to a passenger to make a maneuver, the first thing the passenger will do is look out the window. The passenger adjusts the conversation based on the situation on the road."

On a cell phone, however, if the driver stops talking, the person on the other end of the line might think the call has been dropped or something else is wrong. They have no idea of the situation.

"On a cell phone, there is a lot of pressure to keep up the conversation, and that's a big demand on the driver," he points out.

Simons says that simply banning the use of hand-held phones while driving will probably not have any impact on safety if handsfree cell phones are still permitted, or even encouraged as is the case in some states. For example, when New York first banned handheld phones, drivers who received tickets for talking on their phones could get the tickets waived if they brought in a receipt showing they had bought a hands-free set.

"The one way that banning only hand-held phones could help is that by doing so you're effectively banning texting while driving. And texting while driving is much, much worse."

The Kindergarten Waiting Game

Delaying a child's enrollment in kindergarten may be less beneficial—and more harmful—than you think.

For the past 30 years increasing numbers of children have enrolled in kindergarten at age six instead of the traditional age of five. Research at the U of I indicates that delaying a child for a year, however, only temporarily elevates their scholastic achievement and indirectly increases grade repetition and diagnoses of Attention Deficit/Hyperactivity Disorder (ADHD).

While it's true that older children generally are higher achievers in early grades, research by U of I's Darren Lubotsky, a professor of economics and labor and industrial relations, and Todd Elder at Michigan State University believe it's the result of having more knowledge prior to entering school rather than being better able to learn the material.

As early as the third grade, the researchers found, the association between entrance age and test scores is gone. This is particularly true amongst low-income students who generally enter school with fewer academic skills than more affluent students.

Even amongst more affluent students, however, the association between entrance age and test scores is typically gone by eighth grade, the researchers report.

The researchers also estimate that when schools move kindergarten cutoff birth dates from December 1 to September 1—thus raising the average age of kindergarten students by holding back children who turn five in the fall—it increases the number of ADD/ADHD diagnoses by 25 percent amongst children whose own entrance age was unaffected by the date change.

This could be because teachers play a critical role in diagnosing ADD/ADHD (symptoms must be displayed in two separate places before an official diagnosis), not to mention whether a child repeats a grade, and the teachers are comparing children who are younger relative to their classmates, the researchers write.

"Some diagnoses [of ADD/ADHD] may simply reflect a lack of emotional maturity among young kindergarten entrants," the researchers write. "Alternatively, the oldest children in a class may be under-diagnosed because their disabilities are masked in comparison to the behavior of younger classmates."



SUPERFAMILIES: MAJOR 'GLUE GRANT' UNCOVERS THE POWER OF ENZYMES

Enzymes operate with seemingly superhuman powers—speeding up chemical reactions within cells in ways that still baffle scientists. What's more, researchers have discovered thousands of previously unknown enzymes in recent years, but the function of at least half of them is not yet known. With this need in mind, efforts to discover enzyme functions have received a major boost with a \$33.9 million, multi-institutional grant led by the University of Illinois.

"Enzymes are nature's catalysts," says John Gerlt, the LAS biochemist and enzymologist leading the effort. "The body needs them to generate energy, to grow, to synthesize new materials. For our muscles to move, it takes enzyme reactions. But it also means the reactions are happening very fast."

Gerlt is the world's authority on the enolase superfamily of enzymes and has been studying them for more than 20 years—well before anyone even knew they were part of a superfamily. "My particular fascination with enzymes is that they can increase the rates of chemical reactions by a factor of 1015 compared to reactions in the absence of the enzyme," Gerlt

continues. "What is it about the three-dimensional structure of an enzyme that allows this very large enhancement to occur? How do they do that?"

Gerlt is actively looking for answers as the principal investigator of the prestigious "glue grant" funded by the National Institutes of Health. It is called a glue grant

because it brings together nine institutions, with the University of Illinois acting as the lead.

The grant will be shared among the institutions over five years and will target five different enzyme superfamilies, including Gerlt's specialty, the enolase superfamily. The program, formally known as the Enzyme Function Initiative, expands on an effort led by Gerlt since 2004. It also includes two other LAS re-

searchers—John Cronan in microbiology and Jonathan Sweedler in chemistry.

In addition to discovering the unknown functions of various enzymes, Gerlt says there

is a biological element to the program, as researchers also uncover the structures of these enzymes.

"We also want to understand how changes in the amino acid sequences of enzymes can change their function," he adds.

If scientists can learn how nature generated new enzyme re-

actions by changing the amino acid sequence, they may be able to glean the secrets needed to bioengineer new enzymes. The result might be new catalysts that make it possible to create new drugs to combat long-standing ailments.

"If you want to understand how nature did it, you need to know the functions of the proteins," Gerlt says. "That's the missing information."

An International Leader

The University of Illinois has received strong support for its leading international and area studies programs as six campus centers recently acquired \$14.7 million in competitive federal grants to continue their curriculum and outreach over the next four years.

The six Title VI grants, awarded by the U.S. Department of Education, are funding five National Resource Centers within the College of Liberal Arts and Sciences—East Asian and Pacific Studies; Latin American and Caribbean Studies; Global Studies; Russian, East European and Eurasian Studies; European Union Studies—as well as the Center for International Busi-

ness Education and Research.

The centers support international curricula, library collections, and conferences, and provide outreach to local and regional K-12 educators related to their world region. Hundreds of faculty members from departments across the Illinois campus are affiliated with one or more of these

Hurricanes Are Nurtured in Pouches

Hurricanes and kangaroos have more in common than you might suppose.

Like baby kangaroos, embryonic hurricanes can develop in wave "pouches." These are regions of closed "Lagrangian circulation" in which storms are nurtured, transforming them from weak tropical waves into intense tropical cyclones, says Zhuo Wang, an assistant professor in atmospheric sciences.

Wang and her colleagues surveyed 55 tropical cyclones that formed over the Atlantic and eastern Pacific oceans during August and September from 1998 to 2001; they discovered that 53 of them developed in a wave pouch. The researchers further confirmed the pouch theory using high-resolution numerical model simulations.

Understanding the pouch dynamics of a tropical cyclone can help improve forecasting, and it can also allow researchers to pinpoint the "genesis point"—the spot in the center of the pouch where the tropical cyclone develops. By identifying the genesis point, researchers know exactly where to fly when they're doing research inside the precursor disturbance of a tropical cyclone.

centers.

SONOGRAMS IN SPACE

Irregularly shaped 'envelopes' could mean the birth of twin stars.

"It's going to be twins" can be shocking news for parents, but not so much for astronomers.

Binary stars—or twin stars—are much more common than single stars, says Leslie Looney, an LAS astronomer. What's more, he says they now have the first observational evidence supporting the theory that an irregularly shaped cloud of dust in space stands a good chance of dividing into two stars. Think of it as a sonogram in space, predicting the birth of twin stars.

Using images from the Spitzer telescope orbiting in space, the research team looked at 20 clouds, or envelopes of dust and gas, and found that 17 of them were irregular or "blobshaped." Most of these irregularly shaped envelopes were thought to contain twin stars in development, while the other three envelopes were much more spherical and were believed to hold single stars.

"We think that asymmetrical envelopes mean we are seeing the early stages of the formation of binary systems," Looney says. "We're seeing asymmetries that we've never seen before."

Stars form within a spinning envelope of dust, he explains. This is the "egg" in which the single star or twin stars will be born. The dust falls onto a disk encircling the developing star, and then it drops down onto the surface of the fattening star. Eventually, the gathering material will get so hot and dense that fusion happens and the star begins burning hydrogen and helium.

A star is born. But it takes a gestation period of about 10 million years to reach this point, and that's one long pregnancy.

Scholar Chosen to Lead Chicago Humanities Festival



Matti Bunzl, a professor of anthropology and the director of the Program in Jewish Culture and Society in the College of Liberal Arts and Sciences, has

been appointed as the next artistic director of the Chicago Humanities Festival, the largest humanities festival in the U.S. The appointment was effective at the conclusion of the 2010 festival. The three-week-long festival, first held in 1989, attracts thousands of visitors to Chicago each fall for a celebration of ideas. The festival brings together novelists, scholars, musicians, archaeologists, historians, artists, performers, playwrights, theologians, poets, architects, policy makers, and others to offer performances, screenings, exhibits, and discussions on a theme of universal interest.

A HEARTBEAT AWAY

FLEXIBLE DEVICE MAPS ELECTRICAL PROBLEMS IN THE HEART AND THE BRAIN

- Elisa was only 12 when the first seizure struck. "I felt like someone was choking me," she writes on the Epilepsy Foundation website. "I thought, 'I'm gonna die at 12.""
- An elderly woman said it felt like her heart was going to burst from her chest. Out of the blue, one or two times a year, her heart would begin racing, beating close to 300 times per minute, rather than the normal range of 60 to 100.

These scenarios describe two dramatically different problems—epileptic seizures and irregular heartbeats. But at the core, both conditions involve something going awry with electrical signals in the body—one in the brain and the other in the heart. What these conditions also share in common is that they can be monitored by groundbreaking new flexible electronics developed at the University of Illinois.

John Rogers, a researcher in chemistry and materials science, is known internationally for his work on flexible, stretchable electronics. But now, for the first time, this technology has proven successful in animal trials that show promise for new modes of medical treatment.

In tests, the U of I's ultrathin electronic array has been able to track electrical signals in cardiac tissue in beating hearts to determine which regions are causing irregular heartbeats. Researchers also recently announced the development of a similar flexible device that maps electrical signals in the brain to pinpoint problems that lead to epileptic seizures.

> "The human body is soft and elastic and curvilinear, while silicon wafers are not," says Rogers. "We thought that if you can create a flexible technology that is more compatible to the human body, then you can bring highquality electronics to bear on all kinds of problems in human health."

> > Out of this idea emerged a collaboration with the Penn School of Medicine, where flexible electronics, fabricated at Illinois, are being used in both the heart and brain.

In the heart, a thin sheet of plastic—like high-tech plastic wrap—sits directly on top of the heart during surgery to correct

arrhythmic hearts. This thin plastic holds 2,000 transistors grouped among 288 different sensors. Each sensor measures and maps out electrical activity in the heart, helping the surgeon pinpoint the aberrant heart cells behind the irregular heartbeat.

Once the aberrant cells are identified, the surgeon removes them through a procedure known as cardiac ablation.

Currently, surgeons identify problematic cells using a single probe, moving it to various locations of the heart. This process is mechanical, less precise, and more time-consuming than using thin, flexible electronics. And as Rogers points out, time is of the essence during open-heart surgery.

The toughest part in developing the device, he says, was creating waterproof electronics that wouldn't be damaged by bodily fluids or by the saline solution used during open-heart surgeries.

Rogers's team is now working with a Boston startup company and the University of Arizona to adapt the same electronics for a catheter approach to irregular heartbeat problems. Instead of opening up the chest, doctors feed the flexible sensors into the heart on a catheter, where they can do much the same thing—identify problem cells.

In the epilepsy case, researchers are using flexible electronics to map out electrical signals in the brain. All of the folds and fissures in the brain pose an even greater challenge than the smoother surface of the heart, but so far Rogers says they have been successful in overcoming this obstacle.

"We have devices that can fold up and insert into the gap between the right and left hemisphere of the brain so you can monitor electrical activities on both inner surfaces at the same time," he says.

in Transation

A UNIQUE NEW CENTER IN LAS PREPARES STUDENTS FOR A BOOMING FIELD

Tough economic times can be hard on recent college graduates. As Elizabeth Lowe describes it, however, there's such a recession-defying demand for students coming out of a new, tiny center on campus that employers are calling to say, "Thank you."

Signs of the growing need

for foreign language translators and interpreters are literally on display. Behind those humorous Chinese-to-English street sign translations in China, for example—"Slip and Fall Down Carefully," or "Do Drunken Driving"—is a serious effort by the nation to accommodate tens of millions of foreign visitors whose numbers have nearly doubled since 2001. (China has

since sought to curtail prominent translation gaffes.)

Lowe, director of U of I's new Center for Translation Studies, notes that the U.S. federal government has more than 10,000 jobs for linguists that they cannot fill, and the U.S. Department of Labor predicts a 22 percent increase in corporate



Elizabeth Lowe and students at the Center for Translation Studies lab.

translators over the next eight years.

"I've had people come to me from the U.S. State Department, the United Nations, from various organizations in the European Union, saying, 'We're so glad that you're starting a program. We desperately need people. We can't fill our jobs," Lowe says.

While part of the trend comes from increasingly globalized national and economic affairs, it's also a matter of law. In 2000, President Bill Clinton signed an executive order that requires federal agencies, and those receiving federal funds, to ensure that people who are not proficient in English can access their services. Many local and state laws require similar provisions.

Translators and interpreters are needed in security, nongovernmental organizations, courts, health care, international publishing (the Center for Translation Studies partners with Dalkey Archive Press, an independent publisher on campus), and—in a "huge" area, Lowe says—the software industry, as companies such as Microsoft adapt their products for worldwide consumption.

The U of I's School of Literatures, Cultures, and Linguistics, along with top administrators, created the Center for Translation Studies in 2007, making Illinois the first major research university in the country with such a program. Students who enroll in the program must be proficient in a foreign language, but they may remain in their major of choice while earning a general certificate in translation that qualifies them for more specialized programs.

Lowe says they hope to add a master's program in interpretation (translation is text-

based, and interpretation is oral).

For now the center is relatively small. Teaching duties are spread amongst Lowe, two lecturers, and a visiting professor housed in the Foreign Languages Building. Other professors may also teach courses that count toward the certificate. Roughly 50 students are enrolled in the program at any one time.

Though the program is

young, Lowe can already recite success stories. One graduate landed a job with the European Union, and two others received Fulbright Grants to teach in Turkey and Austria. One is publishing her translation of a Korean novel, and another plans to become a medical interpreter. Another is teaching language in Teach for America, a highly coveted position for college grads that places them as teachers in underserved schools.

U of I senior Samantha Duckett enrolled at Illinois uncertain of her future but became focused on translation after a touch of serendipity. As a sophomore she was meeting with her academic advisor when the fax machine beeped and out came a flier for the Center for Translation Studies.

Intrigued, Duckett switched her major to international studies and is now on track to earn

the translation certificate by spring 2011, with the ultimate goal of becoming a conference interpreter at the United Nations.

The Center for Translation Studies teaches a variety of languages, Duckett says, adding that the staff is networked, experienced, and teaches modern techniques. (One of her few criticisms is that the center could do more to publicize itself.) She hopes to earn a master's degree from the center when its graduate program begins.

Even as demand blooms for translation and interpretation, the center is adjusting for challenges that already are looming in the industry. One of these is computer translation applications, which, until now, have been the source of many of the confounding and humorous translations seen on doors, street signs, and menus everywhere. The American Translators Association reports that police in London, England, used computer software to translate a sign warning pickpockets that they are being watched by undercover police. To Spanish speakers, the translation read, "The pickpockets are kept. Police of the inner deck that works in the area. In July three the pickpockets received prayers of the prison over of four years."

While computer translations will undoubtedly improve (they are a subject in the center's course offerings), Lowe predicts they will always lack an element that only human translators and interpreters possess. Translation and interpretation has been called an art in which you're also conveying cultures, current events, and prevailing moods that are difficult to put into words.

Marketers in Germany created a billboard selling shaving cream that played off the memory of Martin Luther King Jr. Their pitch line, "I have a cream," made at least one Internet site of translation bloopers, and revealed how translations need more than proper grammar and syntax to convey the right message.

"Meaning changes constantly. And knowledge is changing constantly," Lowe says. "There's no way that a human programmer or a group of human programmers can be feeding the computer all that data as fast as knowledge is generated. The human translator will never be replaced."

<u>Predicting</u> the flow of oil

Economist untangles the complexity behind one of the world's most sought commodities.

By Dave Evensen

Of all the commodities swapped on the global market, you'd be hard-pressed to find a more emotional subject than oil. An economist at the U of I, however, has developed a statistical model that he believes can predict and help understand the volatile market even as it's punctuated by murky contracts, international politics, hurricanes, and conflict.

Hadi Salehi Esfahani, professor of economics and director of the Center for South Asian and Middle Eastern Studies, has gathered data from 125 countries to gauge a market that has thus far largely defied predictions. At the heart of his model is a system of equations and a data grid analyzing how each country trades oil.

He can crunch the numbers on any given situation (hypothetical or real) that affects the flow of oil. The recent oil spill in the Gulf of Mexico? Esfahani hasn't applied his model on that yet, but by thinking in terms of shipping and demand he's pretty certain the environmental disaster had little effect on oil prices. Tensions between the West and Iran could be a very different matter.

According to his calculations, the current situation—that is, sanctions on investing in Iranian oil by some Western countries, including the U.S.—have not significantly affected the worldwide price of oil, says Esfahani, himself a native of Iran.

If tensions escalate into widespread sanctions on Iranian oil, the effect will become "tangible," Esfahani predicts, with prices rising 10-15 percent in the long term. If tensions escalate so that Persian Gulf shipping is threatened, he says insurance rates on oil shipping in the region would go "through the roof" and force other oil producers to find alternate routes, driving oil prices up some 30 percent.

If tensions and altered trade routes cause an overall 10 percent drop in oil production in countries around the Persian Gulf, Esfahani predicts oil prices will surge by 50 percent. If war breaks out, he predicts oil prices would triple or more in the short term.

Esfahani has also gauged how economic growth has affected oil prices. By analyzing historical data he determined that a quarter of the recent upward

trend in oil prices (a 190 percent increase from 1997 to 2007, adjusted for inflation) stemmed from growth in China and India. Another quarter was due to "transition countries" that grew after the Soviet Union collapsed, and another quarter came from growth in developed countries.

His model—which he hopes to soon present in conferences and publications—is more detailed than previous ones, Esfahani says.

"Some other researchers have tried to do similar things, but they look at regions," he says. "They look at East Asia, and not Japan, Korea, Taiwan, and China separately. These individual countries have different characteristics, different needs, and different market conditions."

The model cannot account for the effects of sudden events such as Hurricane Katrina, which within days spiked the price of processed petroleum. Nor can it predict the effects of unknowns such as sweetheart deals and corruption. To Esfahani, however, those factors are random events that he has compensated for in statistical equations.

"Basically [my] contribution is to find a way or separate out and identify the impact of each variable, statistically, correcting for factors we don't observe," Esfahani says. "Secondly, the model tries to examine trade at the very micro-level and look at individual countries trading with each other."

The model addresses many issues directly, including distance between trading partners, alternative trade routes, composition of oil, trade agreements, and effects on GDP. New oil discoveries in Brazil, for example, would increase that country's own oil consumption.

He has also found that the amount of oil a country exports depends not only on the volume of its oil production, but also how efficiently and cheaply it can produce the oil.

The overarching theme of his work, however, is determining what shapes and hinders the oil trade.

"One of the things that is important in economics is barriers to trade," he says. "If you remove barriers to trade, there are opportunities for improving everybody's life, because unnecessary costs are going to be removed."

WHY WE DON'T ALWAYS SEE THE GORILLAS IN OUR MIDST

By Doug Peterson



GORILLAS

Roughly half of the participants did not see the gorilla. They were too focused on counting basketballs.

"Not seeing the gorilla is so counterintuitive that it's jarring," Simons says. "For the first five years or so, every single time I showed the video in a talk, I was convinced that everybody in the audience would notice the gorilla. It took years to finally understand that that wasn't going to happen."

The experiment has been copied in many different countries, but the result is always the same. About half of the people do not see the gorilla. According to Simons, when people are told about the gorilla and then view the video a second time, some are convinced that the tapes have been switched.

The video went viral, getting emailed from person to person. But word really began to spread in 2001 when *The New Yorker* mentioned the experiment; since then, it has been discussed in *Newsweek* and on TV programs

ranging from *Dateline NBC* to *CSI*. In 2004, the illusion even earned Simons and his collaborator on the study, Christopher Chabris, an "Ig Nobel" Award, handed out annually to researchers whose experiments make people laugh and then make them think. Simons's trophy—a pie tin with the words "2004 Ig Nobel Prize

Medal" scrawled on it—sits proudly on top of his Monty Python DVDs in his office at the U of I's Beckman Institute.

The YouTube video of the gorilla study

has surpassed 1.5 million views.

The gorilla experiment showed that "we're only aware of a relatively small portion of our visual world at any moment," Simons says. We assume we see most unexpected events in our field of vision, but we don't realize just how much we're missing.

As attention grew around the experiment, Simons and Chabris realized that the invisible gorilla was a metaphor for a much broader concept—that our intuitions deceive us in many ways. In their new book, *The Invisible Gorilla*, they describe how our intuitions deceive us in six areas—memory, perception, confidence, knowledge, cause, and potential.

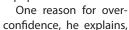
For instance, they describe research showing that people have a strong tendency to exaggerate their abilities in their minds—the illusion of confidence. Simons says this explains how people, with clearly no singing ability at all, will audition for *American Idol* and then throw a fit when they are not chosen to move to the next round.

"In fact, the people who are the *least* competent often are the most overconfident about their skills," he says. It's called the "unskilled and unaware of it" effect.

To test this theory, Simons, Chabris, and their colleague Daniel Benjamin studied a group of highly intelligent people who have a precise measurement of their abilities—chess players. Competitive chess players are given numerical ratings based on whom they lose to and whom they beat. It doesn't take long for these ratings to become calibrated and highly accurate. So they asked players at the World Open tournament two basic questions: "What is your current rating?" and "What should your rating be to accurately reflect your current strength?"

A little over 70 percent of the chess players said their rating should be higher—an average of 100 points higher. This is a dramatic level of overconfidence, Simons says, especially since experienced chess players should know

that their ratings are extremely accurate measures of their actual skill. What's more, the chess players who were rated in the bottom quarter had a much higher degree of overconfidence than the players in the top quarter.



is that when people succeed, they usually attribute it to their ability; but when they fail, they often attribute it to dumb mistakes, not inherent skill.

"We tend to keep track of cases that are consistent with our positive views of ourselves and forget the cases that are not," he says. "It's called the 'self-serving bias."

The same illusions are in play in other areas, such as memory—even memories tied to emotional events, such as 9/11.

"We tend to mistake the vividness of our memories for accuracy," Simons says. "When we recall something, especially something that's emotional, we feel like we're playing back a videotape." The reality is that vivid memories suffer from the same distortion, forgetting, and embellishment as more run-of-the-mill memories, such as remembering people's names.

Simons says research on memories surrounding events such as 9/11 and the Challenger explosion have shown the fallibility of emotionally charged memories and how they change dramatically with time. In *The Invisible*

Gorilla, he and Chabris illustrate this when they discuss the infamous case in which Indiana basketball coach Bobby Knight allegedly choked a player, Neil Reed.

Reed reported that Knight choked him for about five seconds during practice before two assistant coaches had to pull Knight away. Knight, on the other hand, barely remembered the incident. He said the worst he might have done is to grab Reed and move him. Video evidence surfaced later and showed that both memories were flawed. It showed Knight grabbing Reed by the front of the neck for a few seconds and then pushing him. But no coaches separated them, as Reed maintained.

Knight's distorted memory downplayed the event because he perceived it as nothing out of the ordinary for a normal practice, Simons says. But Reed embellished the event because to him it was a jarring and unusual event. Both men distorted their memory to make it more consistent with their "internalized, personal parrative"

Simons continues to punch holes in our illusions, and he did so at the 2010 Illusion of the Year festivities by presenting a new take on the invisible gorilla video. People were shown what appeared to be the same old video with the gorilla wandering among players passing a basketball. But two new twists were added: One of the players wanders off-screen, and the curtain in the background slowly changes from red to gold.

When he first conducted this study on the U of I campus, all of the students who were familiar with the original video saw the gorilla, of course. But fewer than 30 percent noticed even one of the two new unexpected events.

"Once people spotted the gorilla, they stopped their search—a phenomenon known as 'satisfaction of search," he says. "Once you find the obvious thing, you stop looking for other things."

This kind of problem plagues professions like radiology, Simons says. Radiologists looking for a broken bone on an x-ray will usually stop searching once they spot what they're looking for, often missing something else, such as a small tumor.

"It turns out that unexpected things don't draw our attention," he explains. "That's the surprising thing, and it's a consequence of something that's good for us—focused attention. Most of the time we want to stay focused on what we're trying to do, without being distracted by every little thing. The consequence is we sometimes filter out things we want to see. The bigger problem, though, is that we don't realize how much we're missing."



U of I alumnus ignites effort to recover those who vanished in a battle that haunts him still.

By Dave Evensen



Leon Cooper first saw the South Pacific beaches of Tarawa during the height of World War II. Just a couple years removed from the U of I, he was a somewhat irreverent naval ensign with

a graveyard wit, joking that he joined the U.S. Navy because instead of fighting in trenches "you just drown." At Tarawa, his first battle, he'd learn the grim reality of war at sea.

U.S. commanders at the time considered the remote string of islands some 2,500 miles southwest of Hawaii as crucial to winning the Pacific. The Tarawa atoll, however, specifically the island of Betio (bay-shio), was occupied by almost 5,000

entrenched Japanese troops who had vowed that not even a million men could take it.

The American attack on Betio on November 20, 1943, was hamstrung by errors. Delays gave the Japanese precious time to reinforce their posi-

tions, and a low tide forced American landing craft to navigate slowly through coral reefs in the face of withering enemy fire.

Cooper (AB '41, general curriculum) led a group of small Higgins landing boats tasked with delivering U.S. marines ashore at Red Beach. He

says the horrors of the landing "played tricks" with his mind, and he's hesitant to spell out details for fear of misstating the truth, but suffice it to say that the deadly race to shore tested every bit of Higgins boat commanders' courage and skill. If they unloaded the marines too early they'd drown. If they drew too close to shore the boat would be an irresistible target.

And too often, Cooper says, the ending was the same, with marines finally reaching the beach only to be cut down by a Japanese crossfire.

More than 1,100 Americans and some 4,700 Japanese died at Betio, prompting public outcry over whether the American victory on what the Chicago Daily News famously called a "stinking little abattoir of an island" was worth it. After the

war U.S. Marine General Holland Smith declared that Tarawa was a mistake.

The battle—the first of six for Cooper—haunts him still. For years Cooper dreamt in his sleep that he was sinking down among the bright blue,

The Battle of Tarawa claimed more than 1,100 American and 4,700 Japanese lives. yellow, and red corals of the South Pacific, and on the ocean floor he'd see a smiling little boy sitting atop a sunken American

> "I was not exactly a sane, normal person after having experienced all that," recalls Cooper, 90. "Frankly I don't know how my wife [Alberta, now

deceased] put up with me. But she understood me."

Almost 70 years later, however, the terrible memory is fueling what Cooper considers an American redemption. Only recently he learned that many of those who perished at Tarawa were never recovered. Now he's become a symbol in the effort to bring them home.

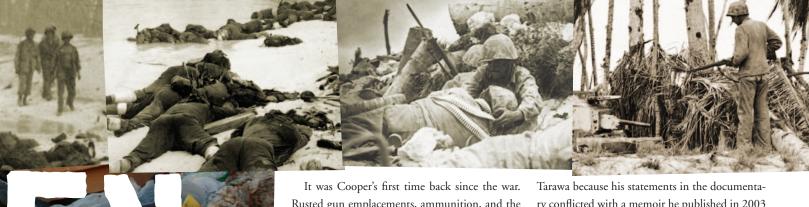
THE FORGOTTEN GENERATION

Estimates vary, but of the 74,200 missing Americans from World War II, as many as 500 were lost at Tarawa. Some were swept out to sea. Others were lost in temporary graves that vanished when Navy Seabees built an airstrip after the battle.

Tarawa veterans and their loved ones were once a powerful voice for those who died there. In 1988 they preserved a battle memorial when the Republic of Kiribati wanted to build a new coldstorage facility for Japanese fishing boats. But the question of what happened to the missing Americans faded as their parents, spouses, and siblings aged and passed away.

David Silliman, of Chatham, N.Y., remembers his grandmother riding in Memorial Day parades in memory of her lost son, George Traver, who vanished at Tarawa. Today Traver's name is engraved on his mother and father's tombstone in eternal anticipation of the day he finally returns.

Silliman was born nine years after Tarawa, but he was always curious about his missing uncle, and now he's the family advocate for bringing Traver home. He has submitted family DNA to



the military to identify Traver's body should they find it, and he has attended military briefings for families of the missing.

"They said, 'Tarawa is very difficult,'" Silliman recalls, of one such briefing. "I still don't know what they meant by that."

Nancy Waldenville Brewer, a middle school teacher in Oklahoma City, wants to know the fate of her uncle, Arthur Bonner Waldenville, who disappeared at Tarawa. She has spoken to veterans of the battle but has uncovered few answers. Her late father never fully recovered from the loss of his brother, she says.

"I think it's a torch that gets passed," she says. "If there was a recovery, it would heal a wound of my father's."

ONE MORE CHANCE AT RECOVERY

After the war, Cooper worked in the public and

private sectors before retiring in Malibu, Calif. In 2004 he happened upon a news report about garbage accumulating on the beaches where Americans landed at Tarawa.

Calling it an "unpardonable disgrace," he wrote 100-plus letters, emails, and faxes to the White House, the military, and his congressional representa-

tives, and yet he received no response. By chance, however, he met a filmmaker, Steven Barber, who had an interest in Tarawa. In February 2008 they traveled together to Betio to create a documentary originally intended to spur a cleanup.

Leon Cooper on Tarawa in 2008.

Rusted gun emplacements, ammunition, and the remains of wrecked tanks, boats, and planes still littered the island. He even found human bones. Cooper wept on Red Beach, and he swore bitterly when he saw for himself the heaps of garbage where marines had perished.

During sometimes cantankerous meetings with local officials, Cooper made progress in clean-

ing up the mess, but he also learned the more disturbing fact that perhaps hundreds of marines remained on the island in unmarked graves.

Some were being unearthed during construction projects. One Australian contractor found a complete skeleton wearing the remains of an American helmet. About nine months after Cooper's visit,

an American nonprofit group, History Flight, announced that a ground-penetrating radar had detected what it claimed to be some 139 missing marines on the island (it later increased its estimate to more than 300).

The lost marines became the focus of Cooper and Barber's visit. The resulting award-winning documentary, Return to Tarawa: The Leon Coo-

> per Story, followed Cooper during his emotional discovery on the island. Narrated by actor Ed Harris, it aired in April 2009 on the Military Channel (it's still available online).

> The topic hit a nerve, and Cooper was interviewed by CBS, ABC, FOX, CNN, and many

publications. Hailed a hero, Cooper received "hundreds" of emails from relatives of missing World War II service members.

He's learned the downside of drawing attention, however. Some have questioned his role at ry conflicted with a memoir he published in 2003 that says he was AWOL during the battle. Cooper says the memoir was partly fictionalized by a coauthor in hopes of making it a film, and he insists that indeed he did participate in the battle. He has officer's correspondence from December 1943 that indicates he was involved in the landing.

Regardless of the debate, the interest in Tarawa

reignited, and the tides for recovery of the missing began

A few months after the film, Congress passed a resolution affirming the federal government's responsibility to recover the missing at Tarawa, and in August 2010 a team from the U.S. military's Joint POW/MIA Accounting Commission (JPAC) landed

at Betio to search for the missing marines. They found only two Americans, a result that has disappointed Cooper and others, but JPAC has said they plan to return to search for more.

In the meantime, Cooper, still witty and spry, has established a nonprofit organization (MIAs -You Are Forgotten) to collect donations for other film projects on missing World War II service members.

One gets the feeling, however, that he's put a nightmare to rest. Cooper recalls Tarawa in the days after the battle, when he was transporting wounded marines off Betio. One of the wounded—Cooper guesses he was just a teenager was moaning so badly that Cooper gave him morphine.

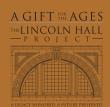
A short while later the man motioned him over. Cooper couldn't hear what he was saying so he bent down and put his ear to the man's lips. The dying man's words were so faint that Cooper couldn't be sure of what he said, and 67 years later he still wonders. But Cooper thinks he said, "Remember me." ■



Joint POW/MIA Accounting Commission members search for remains.



SURVIVING THE CRASH



This is the third part in a series examining the evolution of higher education at Illinois since the construction of

Lincoln Hall. We will explore this topic further as the building's renovation continues.

By Dave Evensen

BLEAK FINANCES

The total University income (including state funding, student tuition and fees, grants, and other measures) for fiscal year 1929 was \$7.1 million. By 1932 it had dropped more than 20 percent, to its Depression-era low of \$5.6 million. Most of that came by way of a drop in state funding after the treasury was slammed by falling tax receipts, but tuition and fees also fell along with a dip in enrollment. Income gradually recovered through the rest of the 1930s.



KEEP OFF THE

During the Great Depression, students were bound by strict measures to uphold campus decorum. Smoking was not allowed on campus, and neither was walking on campus lawns or picking flowers. "They had two policemen on the force then," recalled the late Aurelio (Joe) Florio, class of

1934, to University of Illinois Archives researchers, in 2001. "Old Pete with a big cane roamed around the campus, and if he saw anyone roaming on the grass...he'd blow that whistle and say, 'Get off the campus, get off the campus!"

he 1929 expansion of Lincoln Hall was the exclamation point to an upbeat era at the University of Illinois. The 20th century had thus far been defined by ever-increasing enrollment, a building boom, and a fleet-footed halfback named Red Grange who once scored six touchdowns in one game. On Michigan.

By the early 1930s, however, the University was in the teeth of the Great Depression. Conditions grew so severe that in March 1932 then-President Harry Chase, after calling for drastic budget cuts, wrote to an outraged dean, "There is not a department in the University which is going to be able to do what is necessary without interfering more or less seriously with important work. Yet there is no other way of doing it if we are to finish out the year."

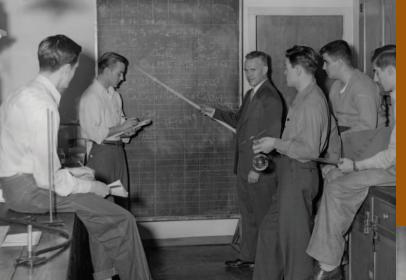
Salaries were slashed. Workers were laid off. State funding dropped off and enrollment fell by more than 25 percent. Students learned how to stretch their dollars and luxuries dwindled. Even the Altgeld Hall carillon fell silent.

Here's a glimpse at how the University coped in the era against which all hard times are measured.



A TWO-THIRDS CUT

In 1932 then-Comptroller Lloyd Morey sent a stark letter to President Harry Chase. Budgeted expenses (excluding wages and salaries) for the spring semester were almost \$600,000. The U of I had only \$200,000 available. Chase ordered all colleges to reduce non-salary expenses immediately by two-thirds, a figure from which he refused to budge even as departments cut into their core research and teaching.



FALLING ENROLLMENT

The Great Depression put college out of reach for many students. Tuition at the University of Illinois was cheap—as low as \$35 per semester in the early 1930s (around \$540 in today's dollars)—but including room and board and other living expenses, a student might have paid up to \$1,000 per year to attend, which was a tall order in tight times when workers might only earn \$20 a week. After enrollment reached an all-time high in 1930, it crashed by more than 25 percent to 10,675 in 1934. By 1937, however, economic recovery was underway and enrollment reached a new high.



CARS AND MORALITY

Students weren't allowed to have an automobile on campus unless it was absolutely necessary. The University cited safety and "moral" concerns in defending the unpopular rule. "We have a certain responsibility to try to help create an environment which is favorable and stimulating to character," President Chase wrote to a dissenter, in January 1933. "With our large registration of women I am not in favor of allowing students to drive freely about the country."



During the Great Depression the University halted construction and building improvements. Travel was restricted. College publications were put on hold. Lectures, art exhibits, and recitals were canceled. Departmental libraries were closed. Secretaries added painting and small repairs to their duties. Some 500 lab rats were exterminated as funding for nutrition experiments disappeared. Livestock for the animal husbandry program was sold as food. Class sections were eliminated. It wasn't enough to stave off staff and salary cuts. The dean of the College of Dentistry in Chicago asked President Chase to spare the wages of cleaning women who were the "sole supports" of their families. "I can only say," replied Chase, in turning down the request, "that we have to do the best we can with the funds that are available."



THE PHILOSOPHICAL DEBATE ON HOUSING

The first women's dormitory at the University of Illinois opened in 1919, but male students had no such option. During the Great Depression most male students either lived in fraternity houses or rented a private room. The questionable condition of some quarters prompted calls for a male residence hall, but they were resisted by fraternities and rooming

houses, with some critics accusing the University of socialism and paternalism. One day, however, dozens of students narrowly escaped a fire that erupted in a private rooming house. That incident changed the tone of the debate, and by 1939 the University approved the first men's dormitory.



presided over by Maria Leonard, dean of women. She assisted female students in a wide variety of academic and personal affairs, but she also was remembered for upholding standards for female students that were considered oddly stringent even then. Her rules for women's rooming houses included thoughts on how long a woman should keep a man waiting when he arrived for a date, dinnertime conversation, living room behavior, and the location of electrical switches so male visitors could not turn off the lights. Female students also received verbal warnings against sitting on men's laps, wearing red, or drinking at public water fountains for fear their lips would appear too luscious.



A WILD STREAK

Despite the Great Depression—or maybe because of it—student stress relief could get out of hand. In the words of one former student, campus was "wild" on April 7, 1933, when Prohibition was partially lifted, allowing the sale of beer consisting of 3 percent alcohol (derisively called "Near Beer" until students added alcohol from the chemistry labs). Another point of mayhem was a spring tradition called cap burning, when men would burn green beanies that they were required to wear during their freshman year. In 1931 it bloomed into a riot with mud fights, nudity, and the storming of sorority houses (in that order). Administrators promptly put an end to cap burnings and the Class of 1934 was stripped of the Sophomore Cotillion the following year. Editorials blamed fraternities for encouraging the tradition, and also administrators for "suppressing" students with strict rules.



DEALING WITH DIFFERENCES

In some ways campus was a fractious place during the Great Depression. Former students reported tension between Jewish and Christian students, Greeks and independents, and blacks and whites. Yet others found campus a place of refuge. Albert Spurlock, a black student athlete from the class of 1938, told U of I Archives researchers that discrimination was relatively mild on campus compared to the outside world. Anxiety about racial discrimination and bread lines prompted him to enroll in graduate school after earning his undergraduate degree. "I enjoyed all of my years at Illinois," he said, "and hated to face the world."



OUTLOOKS ON EDUCATION

Harry Chase wasn't the president of U of I for long (1930-1933) but his tenure spanned some of the worst—and pivotal—years of the Great Depression. With an eye on "conserving fundamental values" of the University, he

advocated eliminating certain introductory courses, cutting back lab requirements, and increasing class sizes. He also decentralized administration and cut down on student regulations, thus heeding his inaugural vow that the institution must resist becoming an "educational factory in which the student is the impersonal unit of raw material and in which the methods of mass production pervade."

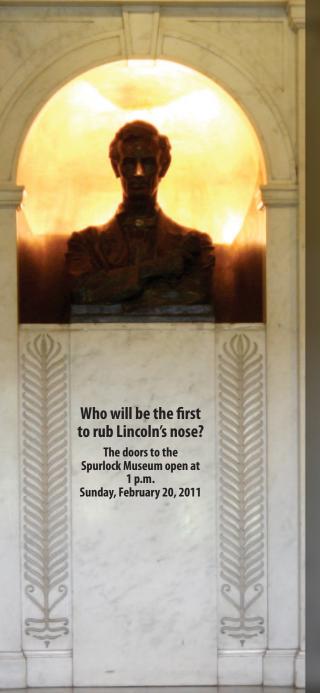


COPING WITH LESS

Students made due with little, but as Beth Olwin Dawson, class of 1933, told U of I Archives researchers in 2001, "There wasn't a lot of money, but then things didn't cost a lot either." You could see a movie for 35 cents (10 cents on Sunday), enjoy a dinner out for 50 cents, or go to a dance for \$2. Round-trip train fare to Chicago was \$3. Still, expenses were cut at every opportunity. Some students made and repaired their own clothes. Free entertainment was popular. The main library reported a 20 percent increase in patrons during the Great Depression. Students also trained for high-wire acts, juggling, trapeze, and other events for the annual Interscholastic Circus, a popular draw in the spring semester.



to come by during the Great Depression, faculty at the University of Illinois still conducted research that shaped and influenced their fields for generations to come. Chemists at Illinois discovered artificial sweeteners and an essential amino acid, and pioneered infrared absorption spectroscopy. The career of Roger Adams, after whom Roger Adams Laboratory is named, reportedly peaked during the 1930s as he broke new ground on the topics of reaction mechanisms and pharmaceuticals. The main library shifted focus to adjust for growing historical research on campus, including that on Shakespeare and Milton. And a U of I physicist built the first cyclotron outside of Berkeley just one year after the department was nearly shut down for lack of funds.



A Nose Waiting to Be Rubbed

A refurbished Lincoln bust will make a guest appearance at the Spurlock Museum.

Fans of the Lincoln bust in Lincoln Hall won't have to wait until the building reopens in 2012 to rub its nose for luck. Beginning on February 20, the restored bust will greet visitors to U of I's Spurlock Museum. The display will afford visitors a rare 360-degree view of the bust and will also offer the chance to restart an old tradition.

"What it looks like now is what it looked like in 1929," says Wayne Pitard, director of the Spurlock Museum, referring to the spotless bust now locked away in the museum's storage vault. After spending several months with a restorer in Chicago, the bust is now free of the chips, nicks, and scratches that have accumulated over the past 80 years. Also gone, reluctantly, is the shine on Lincoln's nose.

"We couldn't fix the damage without also redoing the nose," explains Pitard of the decision to tamper with a campus tradition. "In the dim light of Lincoln Hall people didn't see the extent of the damage. . . . It was quite beat up, and if we did not restore it, within another 15 to 20 years, it would look seriously defaced."

Herman Atkins MacNeil modeled the bust in 1928 from a full-size statue he had made 14 years earlier. He gave the bronze bust a brown patina, which had worn through most noticeably on the nose where decades of students had rubbed it for good luck before a mid-term or final exam.

The exposed bronze on the nose is not what concerned Pitard and other preservationists, however. There were more disfiguring scars, many of which may be attributed to the night in 1979 when pranksters kidnapped the bust and mounted it on a tree stump at a local golf course. "It's heavy," says Pitard, "and maybe they dropped it."

Improper cleaning techniques also took a toll, as did attempts to paint the area behind the bust after the bust was cemented into place following the kidnapping.

"The bust falls into the category of public art—something meant to be touched," says Christa Deacy-Quinn, the collections manager at Spurlock Museum who recommended the restoration. "Lincoln pieces, in particular, have a tradition of touching, which means they will periodically need to be refurbished."

Rather than a loss, Pitard hopes that students and alumni will see the restored Lincoln as an opportunity to start the tradition anew, beginning while the bust is on display at Spurlock. "Thus it is the duty of the next generation of U of I students to begin the process of rerubbing the nose to make it shiny once again."

The connection between the Lincoln bust and the Spurlock Museum, which is celebrating its 100th anniversary next year, is a natural one. The museums that eventually became the Spurlock Museum were located on the fourth floor of Lincoln Hall for most of their existence. Two of them the Museum of Classical Archaeology and Art and the Museum of European Culture—were there for 88 years, opening even before Lincoln Hall was officially dedicated.

TELL YOUR STORY ABOUT U OF I

A "storyography" is the collection of stories people tell about a place, an experience, or time that has touched their lives. These stories become part of their personal and institutional sagas and, in a very real way, define who they are.

Help tell the storyography of Illinois.

The College of Liberal Arts and Sciences invites alumni, students, and faculty to share their stories about their experiences at Illinois. Your story may cut across generations and record joys, sorrows, and triumphs—big and small. The topic is up to you.

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- Share photos.
- Send in a memory—in prose or verse.
- Create your own videos or audio recordings.
- Contact us before your next visit to campus and have us record your story.

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WHO GETS LEFT OUT WHEN TUITION RISES?

Colin Kramer did everything right.

He researched his college options, scored well on the ACT, and socked away as much money as he earned-working 25 hours a week during the school year and full time in summers—ever since he was 16. He wanted to be the first in his family to achieve an education beyond a few courses at

a community college, even if that meant paying for it himself.

"I watched my mom struggle to pay for parochial school for me and my brother when she couldn't afford it and keep us in a home when it was way more than she could afford.... I wanted to remove some of the burden from her."

River Grove, Ill., was accepted into the chemical and biomo-

lecular engineering program at U of I, he thought the hardest part was over.

Until he applied for financial aid. Now Kramer worries about how he'll pay for next year. After receiving \$2,000 in grants and scholarships, taking out all the federal loans for which he is qualified, and working two part-time jobs to meet his payments, he watches his bank account dwindle by \$2,000 a month.

As with a growing number of students, rising tuition and fees are threatening to price him out of Illinois.

For the first time in the University's history, it now receives a larger portion of its operating budget from tuition than from the state appropriation. In 1970, U of I received \$12 in direct state tax support for each \$1 in tuition revenue; in 2010, it was 80 cents from the state for every \$1 in tuition. Families are filling the ever-widening gap left by the state in the form of higher tuition

> payments. The question facing everyone concerned with public higher education is, "How long can they continue to do so?"

> Dan Mann, director of U of I's Office of Student Financial Aid, is seeing more students like Kramer from families whose earnings place them just above the cut-off for federal and state grant aid yet for whom the rising cost of college is increasingly difficult to absorb.

"We sailed past the point a cou-

ple of decades ago when you could work your way through college," says Mann. And for all practical purposes, he says, the dividing line for whether a family of four qualifies for any grant aid is about \$75,000. At Illinois when the total costs of college-including room, board, travel, and books-are taken in consideration, the ticket price for a year is between \$27,000 and



So when this freshman from A growing number of middle-class families are being caught in a squeeze: They earn too much to qualify for federal or state financial aid yet are having a harder time managing the rising cost of college.

\$32,000. "That's half a year's salary based on the average income data in Illinois," says Mann who is seeing problems in families earning as high as

\$100,000-\$125,000. "That's just not manageable for these families."



In the past decade, tuition and fees at U of I has tripled, from a base average of \$4,770 in 2000 to \$12,528 in 2010. This year, the base rate is \$13,508, earning U of I a rank of third in the Big Ten in cost, behind Northwestern, which is a private university, and Penn State.

Unquestionably, U of I is a more costly enterprise to run than in the past. However, the unprecedented increases in the cost of attending have one primary cause: plummeting state support. Since 2002, the University has lost 30 percent of its direct appropriation—in adjusted dollars, it is now 26 percent below 1969 levels.

"There's a point at which we can't continue increasing tuition if we want to remain true to our landgrant mission—the belief that ability, not wealth, should be the primary criterion for attending U of I," says Ruth Watkins, dean of LAS. "We are nearing that point."

Rewriting the Social Contract

Landgrant universities sprang from the Morrill Act, signed by Abraham Lincoln in 1862, that allocated land to each state to sell and use the proceeds in creating a university. With few exceptions (Cornell University and the Massachusetts Institute of Technology), all are public and have long depended upon generous state subsidies to offer college educations at below market rates. The original genius of this low tuition model is that it vested large segments of society in the democratic system by providing them a means of upward mobility. At the same time, it supplied the states and nation with the educated workforce they needed for economic growth.

Although distinguished by their egalitarian approach to education, many landgrant universities have long competed with their private counterparts in reputation and quality. With the erosion of state support, U of I and other "people's universities" are scrambling to find their niche in an arena in which they never intended to compete: net cost versus sticker price.

"Playing the high-tuition, high-aid game is something the private schools do really well," says Randy Kangas, associate vice president for planning and budgeting for the University of Illinois system. "They announce a giant sticker price but everyone gets something, everyone feels special. I don't think it serves us as well as the strong state support model. However, to protect quality and be competitive for top faculty, we have had to move in that direction."



Many private universities have large endowments and relatively small student populations that enable them to flatter students with scholarship offers yet still maintain a higher price tag than their public school peers, says Keith Marshall, director of admissions at U of I, who points to cost and lack of scholarships as the top reasons students give for attending another college.

"A student says, 'I got a \$10,000 scholarship from X private university

and nothing from you.' Well, we try to point out that they're at \$50,000, so even if they are given \$10,000, the cost is still higher, but the student still says it made them feel special."

Public universities in states less hard hit than Illinois are already learning how to play the scholarship game. Several from surrounding states—Indiana, Iowa, Missouri, Wisconsin—are trying to raise their student profiles by targeting scholarships at high-achieving students in Illinois and undercutting U of I's tuition. U of I is poorly positioned to retaliate because it has few merit scholarships to offer, and most aren't awarded until after the student is on campus, defeating their value in recruitment.

The latter is a structural issue that can be addressed; the former—a lack of scholarship funds—is more pernicious. Says Mann, "It's hard to explain to someone who has always wanted their child to come to Illinois, and their child is obviously meritorious, but we simply don't have enough need- or merit-based scholarships to offer."

Leaving Money on the Table

Many economists argue that the high-tuition model is more efficient at matching costs to income because scholarships can be awarded as a kind of rebate to those of lesser wealth, says Jennifer Delaney, an assistant professor of education policy, organization, and leadership at U of I. In the state-support model, everyone pays the same rate.

"We have wealthy students attending U of I that could pay two, three, or even four-times the current tuition rate," says Delaney. "Some economists will argue that we're essentially leaving money on the table by not charging the higher rate. But the concern is that you are squeezing out students at the lower end if student aid isn't keeping up."

Which is what is happening now.

For Illinois's poorest students, the two major sources of financial aid for students who qualify—the federal Pell program and Illinois's venerable Monetary Award Program, or MAP, one of the oldest and most-generous aid programs in the nation—isn't keeping pace with increases in tuition and fees. When MAP was established in 1969, its awards paid up to 100 percent of tuition and fees. In 2003, the same year that state aid to universities began

to plummet, the agency that oversees MAP, Illinois Student Aid Commission, tried to reign in its costs by no longer calibrating its award amounts to tuition. As a result in 2010 the largest MAP grant at a four-year university in Illinois covered only 48 percent of tuition and fees.

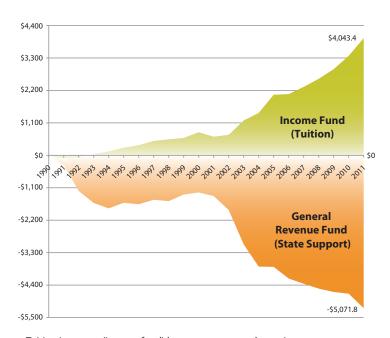
For families with incomes above the cut-off for grant aid, like Colin Kramer, students and families are borrowing at unprecedented rates. U of

I's Mann says that the average indebtedness for the approximately 50 percent of families who borrow for college is \$21,543, up from \$15,000 in 2003-04.

Average student loan indebtedness for graduating seniors at U of I is just above the amount that Mann and other Big Ten financial aid directors generally agree is manageable.

"The \$20,000 to \$30,000 range is what we call the yellow light, or warning light," says Mann. "Depending on your major and your expected salary range, that may or may not be a manageable debt load. The red light, where you begin to have significant risk, is when you get over \$30,000. As

of 2009-10, 17 percent of U of I students who borrowed were above the \$30,000 rate."



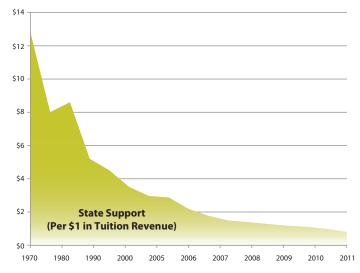
Tuition increases (income fund) have not overcome losses in state tax support (general revenue fund), resulting in a loss to the University of \$1,028.3 per student. Costs are as based on the average expenditure per weighted student, in adjusted dollars.



Building Institutional Aid

The most discouraging aspect of the funding trend for U of I is that even with back-to-back tuition increases of 8.5 to 9 percent, the increases do not keep up with losses in tax support, says Kangas. "When adjusted for inflation, the University now receives \$1,028 less per student than it did in 1980," says Kangas.

To fill the gap thus far, U of I has reallocated resources, deferred hundreds of millions in maintenance, and cut popular programs that are no longer central to the University's mission, such as its Police Training Institute.



For the first time in U of I's history, tuition exceeds the state's direct appropriation as its primary source of operating funds. The state now provides 80 cents for every dollar in tuition, down from \$12 for every dollar in 1970.

The University system has also made modest strides in providing student aid, increasing the amount of dollars available for the neediest students from \$1 million in 2000 to \$45 million today. That sum, however, is divided among all three campuses. The Urbana campus alone has nearly \$67 million in unmet financial need every year, as defined by what it costs to attend U of I and what students are able to pay.

Few campus administrators believe that the state will abandon the University wholesale. Instead, they foresee rough years ahead and slimmer appropriations in the longer term. As with private universities, alumni support will play an increasingly vital role, particularly in providing student aid.

Towards that end, the College of LAS launched a scholarship campaign this fall to coincide with the renovation of Lincoln Hall—the first state-funded capital program for the University in eight years. The college created naming opportunities within Lincoln Hall—from pavers to classrooms—with all funds going towards scholarships.

"Lincoln believed in a 'right to rise,' and that a great nation provided opportunities, such as education, so that people from any income level could rise as high as their ability and drive would take them," says LAS's Watkins. "It seemed fitting that a building named in honor of the president who made public universities possible should help to preserve access to opportunity. After all, that's what's at stake."

Other colleges are likely to follow soon with their own scholarship efforts, which can't come too soon for Colin Kramer.

"It's scary," says Kramer about taking out the large loans he'll need to continue on at U of I. "But I'm working towards a better future, to not have to go through what my mom went through, and to not have to put that burden on my children. It's an investment—that's what I have been told, and I firmly believe that."

BACH®BANJO

LAS ALUM SHATTERS THE BANJO STEREOTYPE

By Doug Peterson

When Michael Miles carried his banjo on stage at a concert nearly 20 years ago, he remembers giving his audience fair warning. He told the

audience at the Winnepeg Folk Festival that he was going to play a 20-minute rendition of one of Bach's cello suites—not the kind of piece that folk music fans typically expect on a banjo.

"I remember thinking who knows what's going to happen by the end of 20 minutes," says Miles, a 1976 LAS alum in speech communication. "But the audience grew and grew and grew. People really seemed to like it."

Today, he is one of the leading banjo players in the country, receiving accolades from critics and performing alongside the best, including folk legend Pete Seeger, the dePasquale String Quartet, and Béla Fleck. Miles has taken this instrument to places it has never gone before—such as the Baroque era. His first foray into classical music with the banjo led to his CD *American Bach;* but an even bigger dividend, he says, is that it turned him into a composer.

"All of my compositions came from having learned Bach and having been taken through the grueling process of translating his work into something for the banjo," he explains.

In addition to composing and performing, Miles teaches the banjo and guitar. From 1984 to 1998, he even served as program director at the Old Town School of Folk Music, where enrollment grew from 200 students to 5,000 under his tenure. Today, he is an artist-in-residence with the school.

Miles grew up in a musical family in Chicago. His father, a "blue-collar guy," would come home from his job with the power company, sit down at the player piano, and belt out show tunes from musicals such as *The Music Man* and *The Sound of Music*.

The youngest of five children, Miles toyed around with the trumpet before picking up the guitar at age 13 and playing in a neighborhood

rock and roll band, The Wild Ones. But

he didn't discover the banjo until he came to the University of Illinois.

"All of a sudden, I had my hands on a banjo and I started poking around with it, trying to make it work," Miles says. "I was really taken by the sound."

The banjo also made it possible for Miles to put his major in oral interpretation to practical use.

Over the years, he has created numerous

stage shows that combine the banjo with literary readings, history, politics, and visual media.

For instance, Miles created what he calls "musical documentaries for the stage" on various key

years from American history, such as 1945, 1957, and 1968, combining music with readings and reenactments from actors portraying historical figures. John Mahoney, one of the stars of the *Frasier* television show, was so taken by the programs that Mahoney wound up playing a role in one of documentaries during a run in Chicago.

Another of Miles' shows, From Senegal to Seeger, incorporates the history of the banjo with the writings of

Walt Whitman and Carl Sandburg and even the testimony of Seeger before the House Un-American Activities Committee in 1955.

In *From Senegal to Seeger*, he traces the banjo—sometimes called "a drum with strings"—back to the slave ships coming from West Africa. One of the first recorded references to a banjo was by a

sailor, who observed slaves playing the instrument in Jamaica in 1796 on the deck of a slave ship bound for Savannah, Ga.

Miles had a chance to perform in Africa this year on a tour sponsored by the U.S. State Department. He would rehearse with African musicians in the afternoon and then perform concerts in the evening—an experience that exposed him to an array of drum-based, string instruments "the likes of which I had never seen before, many of them predecessors of the banjo."

Miles credits people like Seeger, Fleck, and Earl Scruggs with bringing new life to the banjo, which has sometimes been dismissed throughout history. As the Steinway piano makers once said, the banjo is a "half-guitar, half-drum, and like a mule or a mongrel, it has no hope of posterity."

On the other hand, Twain saw the banjo's appeal. As he put it, "When you want genuine mu-

sic—music that will suffuse your system like strychnine whiskey... and break out on your hide like the pin feather pimples on a pickled goose—when you want all this, just smash your piano, and invoke the glory-beaming banjo!"

Miles says he was attracted from the very beginning by the tonality of the banjo. But he was also intrigued by the fact that the banjo was not as popular as

the guitar, leaving a lot more room to be inventive.

"I've been able to find my own musical turf, so to speak, to do things that haven't been done before," he says. "I don't think that would have been possible with the guitar."



Literary Crisis Fueled National Identities



Literature—often in the form of national myths—was instrumental in creating a sense of national identity among fledgling nations in 19th-century Europe. Now a U of I researcher thinks he knows what sparked that literary trend.

In examining why Czech and Russian literary intellectuals of the early 19th century began writing about national identity, David Cooper, an assistant professor of Slavic languages and literatures, discovered that the deepening interest in Greek and Roman classics caused a literary "crisis" within Europe.

Cooper explains that Greek and Roman classics—long the standard by which European literature was judged—became regarded as less relevant by European society as advances in knowledge and technology made apparent the differences between ancient Greece and Rome and modern Europe.

As they retreated from the old standards, another emerged that represented the modern nation—applying history, identity, independent values, and a developing concept of borders and countries. Writers worked to apply this new concept to their literature, and in so doing, began to define national character and history. "Literary intellectuals had a large stake in

the creation of national myths, concepts of national identity, and so on, and they became major players in the process of articulating national identity," Cooper says.

Chemists Invent Simple Sensor for Explosives

U of I chemists have developed a simple sensor for detecting the explosive used in shoe bombs. It could lead to inexpensive, easyto-use devices for luggage and passenger screening at airports and elsewhere.

Triacetone triperoxide (TATP) is a high-powered explosive that is easy to prepare yet difficult to detect—it doesn't fluoresce, absorb ultraviolet light, or readily ionize. Nor are there the available screening methods feasible for on-the-ground use in airports. They require large, expensive equipment, extensive

sample preparation, or relatively high concentrations of TATP in solid or liquid form.

The new system developed by Kenneth Suslick, the Schmidt Professor of Chemistry at the U of I, and postdoctoral researcher Hengwei Lin uses a colorimetric sensor array that can quantitatively detect even very low levels of TATP vapor—down to a mere 2 parts per billion.

"The handheld device makes the whole process portable, sensitive, fast, and inexpensive," Suslick says. The handheld sensor now is being commercialized by iSense, a senor manufacturer based in Palo Alto, Calif.



Aggression May Be Contagious

Children frequently pick up bugs at childcare. But can aggression also be "catching"?

Aggression obviously doesn't spread the same way as a virus. Nevertheless, research from U of I has found that children who spend more than 30 hours per week in non-relative

care through the age of 4½ may become more physically aggressive than peers who spend less time in early child care. What's more, these children managed to combine aggressiveness with popularity.

"There is evidence from other studies indicating that aggression is socially contagious, and that once you 'catch' aggressive behavior patterns, they can endure, even after the original setting is no longer present," says Philip Rodkin, an educational psychology professor who conducted the study with psychology professor Glenn Roisman.

This doesn't mean childcare centers are Petri dishes that create little monsters, for Rodkin and Roisman pinpoint other influences, such as "cognitive functioning" (intelligence) and sensitivity to emotional needs by mothers. But length in childcare stood out as a common denominator among those they classed as "tough" children—kids who are both aggressive and popular with their peers.

To be exact, these popular-aggressive kids spent an average of eight to 11 more hours per week—or a total of 31.8 to 34.6 hours—in non-maternal or center-based child care during early childhood. These children often learn to use physical aggression to bolster their

> popularity, dominance, and status, the researchers conclude.

> Roisman is a co-principal investigator on a study called the National Institute of Child Health and Human Development Study of Early Child Care and Youth Development, which has extensively tracked more than 1.000 children from across the U.S. since they were infants. He and Rodkin examined that data to understand the conditions that favored an aggression-popularity pairing.

> The children, now age 18, have just been reassessed, and researchers hope to assess them

again in their early 20s.

"One question that remains is how popularaggressive kids fare when they transition to college or work roles," Roisman says. Will their ability to combine aggressiveness and popularity serve them well?

It's "totally unclear on the basis of these data," he adds.



Around the College

Can a Fish Be Mr. Personality?

A three-spined stickleback, a fish only about 1¼ inches long, slowly approaches a pike, an aggressive predator several feet in length. The stickleback swims within inches of the pike's mouth, an audacious move for such a small fish. Meanwhile, in another part of the tank, another stickleback hides behind a plant, for it is not about to be caught out in the open with a killer in the vicinity.

Neither fish is aware that the pike is not real; it is a model being used in the laboratory of animal biologist Alison Bell. What is real, however, are the differences that Bell and her graduate researchers are finding in fish personalities.

Having a personality means that an individual, whether you're talking about a human or a fish, will behave differently than other individuals of the same species. Also, it will behave much the same way from day to day and week to week. "There is an element of consistency," Bell says.

Researchers in Bell's lab have discovered significant differences among sticklebacks, and she has found that individual fish are consistent in their behavior. The bold ones are consistently bold, and the timid ones are consistently timid.

Her team has also found that the stickleback behavior they observe in the lab is indicative of behavior in the wild.

"Does that mean that what we're measuring in the lab is relevant to real fish in the wild? It turns out that it is."

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Writing Is on the Rise, Thanks to New Technology

Every generation it seems that someone in the older population looks around at the new crop of students and announces that we are in the midst of a writing crisis. But Gail Hawisher, director of U of I's Center for Writing Studies, takes issue with this common notion.

"More people in the world are writing today than at any other time," Hawisher says. "To represent it as a crisis when you see the remarkable work that students are doing in multimedia venues, which is at the heart of being literate today, is to sell this generation short."

According to Hawisher, there has been a move to broaden the definition of literacy to include composing for multimedia. And in multimedia work, ironically, it's the younger generation shaking their heads at their less tech-savvy elders, such as a professor who picked up a mouse and tried to use it like a TV remote.



"Writing has always been shaped by technology," adds Patrick Berry, a graduate student in the writing center. "Early on, if you were not able to type on a typewriter, you would have had a hard time functioning. I think you see this continuing as people find new methods of expression, like blogging or putting together sophisticated multimedia presentations."

David Stone, a science teacher at University Laboratory High School in Urbana for 27 years, has not seen a writing crisis either. With all of the forms of communication today, from Twitter and texting to online videos, he too believes students are writing and reading more than ever. Despite the occasional horror story of "textspeak" seeping into traditional papers (U C it on occsn), he says his students move easily from one writing form to the next.

"Students today are more versatile and flexible in their writing, hopping from style to style, from texting to blogging to formal papers," Stone points out. He sees this flexibility firsthand through the ExploraVision Awards, the largest international science and technology competition in the world, which his teams have won in the high school category four times out of the past 15 years. Although a science competition, ExploraVision incorporates a heavy dose of traditional writing as well as writing and producing for a website and video.

Stone's work in ExploraVision was what first inspired him to check out the U of I Writing Project, which reaches teachers of all grade levels. After seeing what teachers in the program were doing in writing for new technology, he became the first of two science teachers to ever take the workshop in Urbana.

As a funded site of the National Writing Project, the U of I Writing Project is an intensive, four-week program during the summer, and it exploded Stone's preconceived notions. He dabbled with writing poetry for the first time and has become a self-described "zealot" for the National Writing Project, which taught him that writing is much more than just putting words on paper. He says it's about thinking, organizing, producing, and presenting, and it's about using all kinds of new media and technology.

However, the Writing Project is only one of many initiatives of the U of I Center for Writing Studies, which was established in 1990 to work with both students and faculty.

"We also show faculty how they can use writing to increase the learning of their students," says Hawisher. "Research has shown that active writing encourages you to think differently, and you begin to remember things you've read that you wouldn't otherwise."

Berry cites the case of a horticulture professor whose students began each class by writing about what they learned during the previous class. When a different professor later dropped the class's writing exercise, comprehension and grades plunged dramatically.

"Translating ideas into your own words contributes so much to your learning," Berry says.

College of Liberal Arts

IN THIS EMAIL:

December 2010

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This Old Hall: A Clean Slate

In this episode of This Old Hall, watch as roofers add a new slate roof to Lincoln Hall. There's a craft to the work, as you will see.



This Old Hall: The Cyclorama

We say goodbye to a unique feature of the Lincoln Hall Theater: the cyclorama. A rarity even in its heyday, the massive steel and plaster structure no longer serves the needs of stage productions nor lectures.

You Tube This Old Hall: The Cyclorama CollegeOfLAS 10 videos 8



his Old Hall, see the progress made over the summer in renovating ed most of the upper floors and removed or protected historical n. Work has begun on the exterior.

lectric bicycles on June 9, 2010, at Lincoln Hall to highlight the ct of environmental sustainability.

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DON'T MISS THIS OLD **HALL VIDEO UPDATES**

Follow the renovation of Lincoln Hall online. See how historical techniques are converging with modern, sustainable construction technologies to create a building ready for another century of learning.

lincolnhall.illinois.edu

RAISING \$10 MILLION FOR SCHOLARSHIPS

In celebration of Lincoln Hall's long-awaited renovation, the College of Liberal Arts and Sciences is launching a \$10 million scholarship campaign. The campaign is intended as the first step in creating a permanent means of filling the gap between the cost of attending U of I and a family's ability to pay.

MEMORIAL OPPORTUNITIES

You may give directly to the Lincoln Hall Excellence Fund or you may have your name or the names of those you wish to honor memorialized in Lincoln Hall while also making a gift to this scholarship fund.

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For many years, the Class Notes section of LAS News has been a place for alumni to reconnect and find out the latest about former classmates and old friends. Changing with the times, though, these printed notes have now been moved online so you'll have more room to submit photos and exchange news.

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