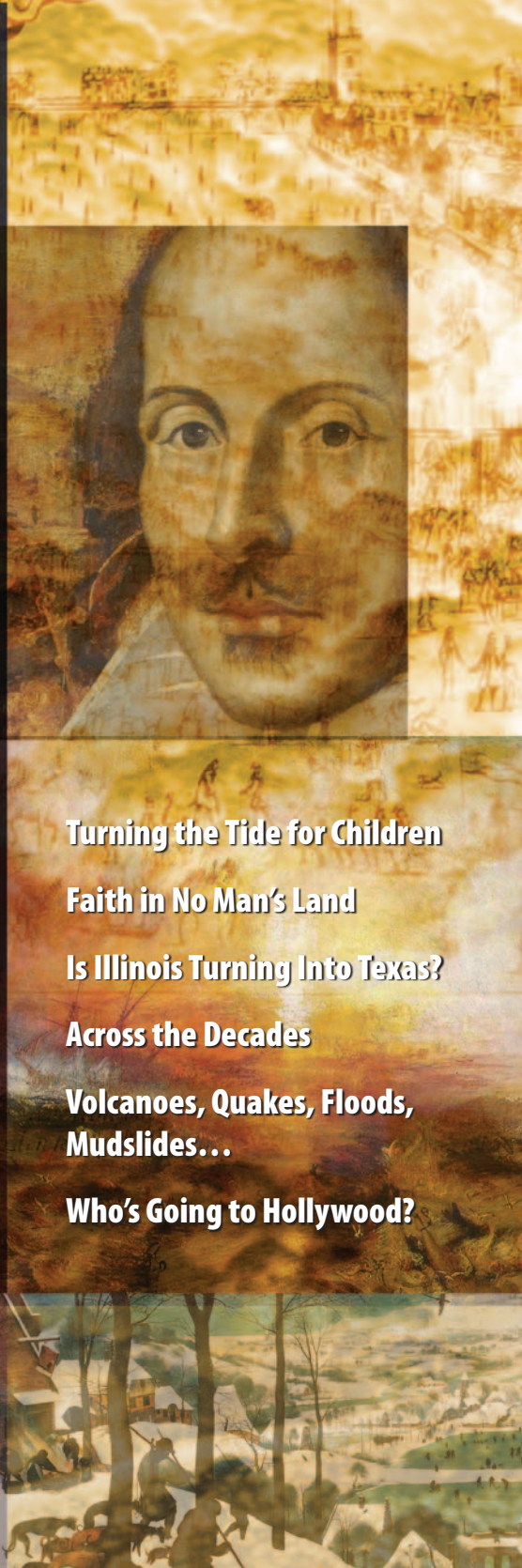


COLLEGE OF LIBERAL ARTS AND SCIENCES

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN



**Turning the Tide for Children**

**Faith in No Man's Land**

**Is Illinois Turning Into Texas?**

**Across the Decades**

**Volcanoes, Quakes, Floods,  
Mudslides...**

**Who's Going to Hollywood?**

# Frankenstein's Weather



SPRING 2010

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## Laying the Groundwork for a Stronger Future

You will see in the pages of this magazine examples of the many accomplishments of our faculty, students, and alumni. We are beneficiaries of extraordinary new initiatives that will touch all areas of the college: from the six-year Mellon Foundation grant for wide-ranging research in the humanities to a new center aimed at developing a working biological machine. Our scholars continue to be recognized with prestigious national awards, and our spring 2010 graduates are moving into roles of service and leadership in society.

These achievements are met with celebration. However, our responses have been more muted than usual as we have come to grips with a budgetary crisis. In January, the president of the University of Illinois system took the unprecedented step of requiring mandatory furlough days of faculty and staff due to millions of dollars in unpaid appropriations from the State of Illinois. The step was seen as necessary to ensure the institution's ability to meet payroll obligations.

We have navigated the spring semester with minimal impacts on our students and our scholarship because of the extraordinary commitment of our faculty and staff. I have been deeply moved by their dedication to maintain the integrity of the students' educational experience as well as by their concern for the long-term welfare of public higher education. Faculty and leadership teams in the College of LAS have partnered with me to examine our operations and investments, to strive toward efficiency in our activities, and to explore new opportunities for revenue generation. We will continue this work, given our deep commitment to accessible education and outstanding scholarship, both of which have the power to transform lives.

The University is openly examining a range of programs and practices within the institution for ways to gain efficiencies and streamline operations without compromising its core mission. We are all asking the difficult questions: Are there things we are doing that we cannot and should not continue to do? Conversely, are we positioning ourselves in ways to meet emerging needs? What are the values that guide our decisions and efforts?

In fall 2010, the college will launch an initiative in that articulates our vision for liberal arts and sciences at Illinois in the 21<sup>st</sup> century. This initiative will enable us to position education and scholarship in the college for advancement as our financial context improves.

We will share more news in coming issues of the magazine as more complete plans emerge. And if you have considered stepping forward to help, please do so now. Your voice needs to be heard in Springfield.

Ruth Watkins, Dean  
College of Liberal Arts and Sciences

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## New Center Takes a Step Toward Biological Machines

University of Illinois researchers are part of a major new center that aims to develop a working biological machine—a complex machine comprised of cells and capable of performing vital functions within the human body.

“This is the next step in synthetic biology,” says Martha Gillette, an LAS biologist and codirector of research for the groundbreaking project. “The idea is to take all of the complexity and richness of biology and use it for new kinds of applications.”

The U of I is a partner with the Massachusetts Institute of Technology (MIT) and the Georgia Institute of Technology in what is known as the Emergent Behaviors of Integrated Cellular Systems (EBICS) Center. The National Science Foundation will invest \$25 million over the next five years in the EBICS Center. Although headquartered at MIT, its efforts will be evenly distributed among the three primary institutions, with each receiving more than \$8 million of the grant.

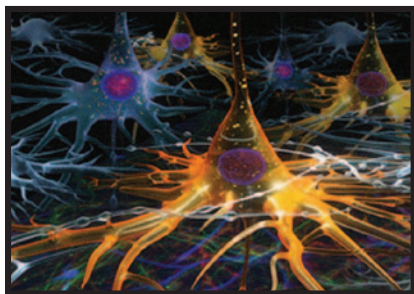
To create a biological machine, EBICS teams will work with many kinds of cells, but primarily those of three types: neurons, muscle cells, and endothelial cells, which make blood vessels. The

neurons will serve as sensors in the biological machine, but they will also need to be able to control the muscle cells to pump chemicals through vessels.

“This means getting different types of cells to grow together and cluster and interact,” Gillette says. “A lot of steps go into that.” To date, researchers around the world have worked extensively on individual cells, but the complex interactions of cell clusters mark new territory. The ultimate idea is to develop biological machines out of one’s own body cells, which would solve problems such as the body rejecting the device.

Research is one part of a three-pronged effort that will also include education and diversity and outreach. The center will be widely interdisciplinary, involving, at Illinois alone, researchers from mechanical science and engineering, electrical and computer engineering, bioengineering, chemical and biomolecular engineering, chemistry, cell and developmental biology, neuroscience, animal science, and veterinary biosciences.

Biological machines “may sound like science fiction,” Gillette says. “But today’s science fiction is tomorrow’s science and technology.”



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## FROM SHELL SHOCK TO PTSD

During World War I, people described the severe trauma suffered by soldiers in the trenches as “shell shock.” Today, it’s called post-traumatic stress disorder, or PTSD. But the change has been more than in name only. Attitudes about the disorder have also changed dramatically, says Mark Micale, an LAS history professor who has done considerable research on the history of psychological trauma.

Shell shock “makes it sound like soldiers are suffering from an actual physical injury,” Micale says. “An artillery shell exploded nearby, and the concussive force of the blast damaged the nervous system or brain.”

By making the injury seem more physical than psychological, the term “shell shock” made the disorder more acceptable.

“At that time, to have said it was all in their head would have suggested borderline insanity or moral weakness—cowardice even,” Micale says. The shell shock label “camouflaged its real psychological nature,” he adds, although it also meant the disorder was finally being diagnosed and treated.

During World War II, stress disorders did not fit into the victorious storyline, so the issue did not come back to the forefront until the Vietnam War. The diagnosis of PTSD emerged at this time, officially being adopted in 1980 by the American Psychiatric Association.

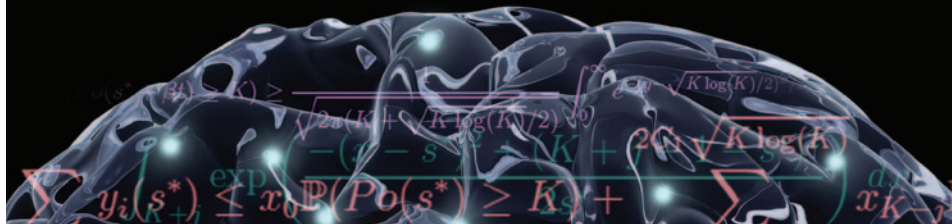
Today, the military has gone beyond simply offering treatment programs. “They also have campaigns to convince soldiers and their families that PTSD is for real,” Micale says. “The message is to know what’s happening to your body and mind, and not to feel alone or ashamed of what is, after all, a very human response.”

## Making Mathematical Connections in the Brain

The brain contains hundreds of billions of interconnected neurons that work together with mathematical precision. In fact, by using new research models, LAS mathematician Lee DeVille was surprised to see how complex networks of neurons can work together even when random disconnections plague the system.

“Isolated by themselves, neurons cannot do nearly as much as they can do collectively,” says DeVille, who is the first mathematician to join a biocomplexity team at the U of I’s Institute of Genomic Biology. “The types of things a brain can do are indescribably more complicated than the types of things a neuron can do.”

He designed a simulated system of neurons and the team found that even with random connections and random failures, the parts of the system continued to work together in sync, as other brain cells got caught up in the activity when some neurons failed to make connections.





## Slim Hopes for Democracy: Government Faces Steep Obstacles in Afghanistan

Even if you set aside the drug trade and terrorism, the prospects of democracy taking root in the rugged mountains and plains of Afghanistan are “not good,” according to a U of I political scientist.

Democracies are generally short-lived anyway, with a life expectancy of about 40 years, political scientists say. But Professor José Antonio Cheibub says that in nations as poor as Afghanistan, where per capita income is around \$760, democracy is expected to last only five to eight years. What’s more, the nation of 28 million faces a host of other factors that tend to make democracy hard to last, such as ethnic fragmentation, powerful clan and tribe allegiances, a lack

of democratic neighbors, a history of colonialism and foreign invaders, and civil war.

“Afghanistan is on the ‘wrong’ side of a long list of things that political scientists have considered to affect democratization,” says Cheibub. “There is not one mitigating aspect that provides a positive outlook.”

His reasoning lies in the nature of power. Elections are a contest for the ability to control how the nation’s income will be distributed, he says. Participants can either abide by the results and settle for shared income, or they can fight to become the dictator and decide alone how it will be distributed. In poor countries, they more often choose to fight.

Cheibub says this stems from two economic facts. “The value of an extra dollar is smaller for those who already have many dollars, and recovery from the physical destruction that comes with fighting is faster in poor than in rich countries.” Therefore, in poor countries the value of becoming a dictator is relatively high, and the costs of fighting are relatively low.

“Economic development is important, but we cannot wait for it to take place for democracy to be instituted,” Cheibub says. “But while we wait, the country still needs to be governed. And doing a little bit, accepting setbacks but consolidating small gains, is better than nothing.”

## Depressed? Fearful? It Might Help to Worry, Too.

A new study of brain activity in depressed and anxious people indicates that some of the ill effects of depression are modified—for better or for worse—by anxiety.

Using functional magnetic resonance imaging (fMRI), researchers looked at depression and two types of anxiety: anxious arousal, the fearful vigilance that sometimes turns into panic, and anxious apprehension, better known as worry.

“Although we think of depression and anxiety as separate things, they often co-occur,” says U of I psychology professor Gregory A. Miller, who led the research with Illinois psychology professor Wendy Heller. “In a national study of the prevalence of psychiatric disorders, three-quarters of those diagnosed with major depression had at least one other diagnosis. In many cases, those with depression also had anxiety, and vice versa.”

Previous studies have generally focused on people who were depressed or anxious, Miller says. Or they looked at both depression and anxiety, but lumped all types of anxiety together.

Miller and Heller have long argued against combining these symptoms. In the new study, the researchers found that the fMRI signature of the brain of a worried and depressed person doing the emotional word task was very different from that of a vigilant or panicky depressed person. And the combination of depression with different forms of anxiety can give different brain results.

Most surprising is that anxious arousal (vigilance, fear, panic) enhanced activity in that part of the brain that is also active in depression, but only when a person’s level of anxious apprehension, or worry, was low.

Despite their depression, the worriers also did better on the emotional word task they were given than did depressed individuals who were fearful or vigilant. The worriers were better able to ignore the meaning of negative words and focus on the task, which was to identify the color—not the emotional content—of the words.

These results suggest that fearful vigilance sometimes heightens the brain activity associated with depression, whereas worry may actually counter it, thus reducing some of the negative effects of depression and fear, Miller says.

“It could be that having a particular type of anxiety will help processing in one part of the brain while at the same time hurt processing in another part of the brain,” he says. “Sometimes worry is a good thing to do. Maybe it will get you to plan better. Maybe it will help you to focus better. There could be an upside to these things.”

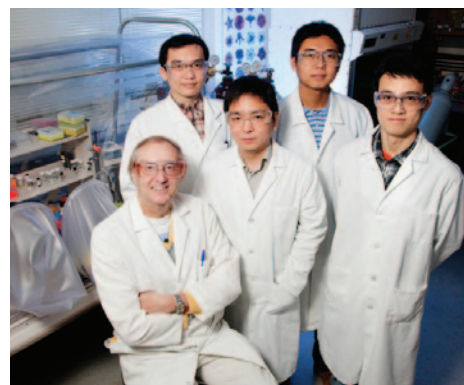
## Hope in the Fight Against Malaria and Bacterial Disease

An unusual chemical reaction that allows malaria parasites and disease-causing bacteria to survive may be their downfall. Researchers at the U of I say they have developed a protein inhibitor that strikes at these bugs’ ability to create compounds necessary for life.

Researchers have long tried to understand an enzyme called IspH that’s essential for bacterial cell walls. Now, chemistry professor Eric Oldfield and his colleagues have engineered a chemical compound that laboratory tests indicate will put the brakes on IspH more powerfully than any previous enzyme inhibitor.

Oldfield’s inhibitor has not yet been tested in cells, but it’s still regarded as a significant development.

“There are a finite number of proteins unique to bacteria and malaria parasites that can be targeted for the development of new drugs. And everyone agrees that this enzyme, IspH, is a tremendous target,” Oldfield says.



# THE BEST OF BOTH WORLDS

## THE 'THIRD WAVE' BRINGS THE WORLD TO ILLINOIS

For much of her day, Youyon Liang's world is limited to her chemical and biomolecular engineering lab, where she hunts for new treatments for liver failure. To reach this goal, however, she is drawing on the best of two worlds: Singapore and the United States.

Liang and her fellow PhD candidate, Noel Xu, are on track to becoming among the first University of Illinois students to receive joint degrees from the U of I and another institution—in this case, the National University of Singapore. When they graduate, their PhD degrees will bear stamps and signatures from both institutions—one of the few such arrangements in the country.

This type of joint degree is at the forefront of a new wave of international experience for students, says Barbara Hancin-Bhatt, director of international programs for LAS. The first and second waves brought semester-long or yearlong foreign exchange programs and then, about 10 to 15 years ago, international field experiences and intensive faculty-led courses abroad.

Advances in technology now make possible a third wave. This includes joint classes, in which students on both sides of the world attend the same virtual classrooms through videoconferencing. It also includes joint degrees, such as in chemical and biomolecular engineering.

"What students are getting, which they may not get in a typical exchange experience, is faculty on both sides of the pond talking to each other and contributing to the degree program," says Ann Mester, LAS associate dean. For instance, with the arrangement in chemical and biomolecular engineering—the first department on campus to offer a multi-institutional degree—PhD students have an advisor in both Singapore and at U of I.

Liang and Xu say that the joint degree was one of the reasons they chose U of I over MIT, which offers a certificate and not a true multi-institutional degree.

"The concept of the research university is evolving," says Ed Seebauer, head of chemical and biomolecular engineering at the U of I. "It began with the German universities in the 19<sup>th</sup> century,

and it tacitly presupposed that universities were local. They might have had some branches nearby, but universities were local entities. Now, many decades later, we have easy and affordable air travel, we have the Internet, we have Skype, we have all sorts of ways for collaborations to take place."

The chemistry department, for example, has a program in which professors travel to Vietnam to teach at the Hanoi University of Science, with a goal of exporting the Illinois chemistry curriculum to other universities in Vietnam. The U of I is also in discussions with three other universities about offering a joint certificate in global studies, Hancin-Bhatt says.

These new, innovative international experiences give students a unique skill set that will help them land jobs, particularly with multinational corporations, Seebauer says. The U of I, meanwhile, benefits by drawing upon some of the finest students available from other countries.

"Whenever you collaborate, you make yourself stronger, assuming you collaborate with a strong partner," Hancin-Bhatt adds.

Liang and Xu both say they benefit from the different styles of teaching and research in each of the countries. As Seebauer explains, the Singapore system provides a strong base of factual knowledge in engineering, while the U.S. system puts more emphasis on open-ended design problems. "You put those two approaches together, and it creates an educational experience that has the best of both." ■

### GLOBAL CLASSROOM

#### A new trend in international studies brings students a short walk away from Africa.

How do you get college students to learn from a genocide that occurred half a world away when they weren't even yet in elementary school? Introducing them to survivors is one way, and inserting them into heated debates over bringing the killers to justice is another. Students at the U of I experienced both during a recent worldwide videoconference on Rwanda's uneasy peace.

Short of flying everyone to Africa, it was international studies at its best, with some 30 students in U of I's Global Studies "International Humanitarian Intervention" course gathering before speakers, cameras, and split-screen displays for a 1 ½-hour discussion with students across the United States and Mexico and Rwandans in Kigali, Rwanda, and UN Headquarters in New York City.

The event, which featured student questions for Rwandan survivors and government officials, went smoothly, with the technology that brought them together an afterthought as students were left buzzing about the intensity of the discussion and the strong characters of the survivors.

The class was invited to the event after lecturer Timothy Wedig met the United Nations videoconference organizer in 2009, when the U of I's Center for Global Studies was named a non-government organization (NGO) affiliate to the UN.



# Turning the Tide for Children

A resilient principal and a moving documentary change fortunes at a Chicago school.

By Dave Evensen

Teresa Dunbar's defining moment came during the 2007-2008 school year, her second year as principal at Chicago's Henry H. Nash Elementary. The school, stricken by poverty, was under the threat of closure for low student achievement, and Dunbar (EDM '94, PhD '98, elementary education) was exhausted.

She was the latest principal in what was turning into an administrative turnstile, with five principals leaving Nash Elementary in the past six years. Stress had blemished Dunbar's skin and made her gain weight. She was arriving in the office at 6:30 a.m. and working 15-hour days, with her time spent on the countless tasks required just to keep the school running, from teaching evaluations to cleaning toilets and lifting boxes off the delivery truck, not to mention turning around test scores in a school of 1,000 kids.

As if the pressure wasn't great enough, she was being followed by a film crew developing a nationally televised documentary about school principals. They wanted a lot more than a quick interview and some footage of kids doing homework. They filmed all year long, looking for character and humanity and how adults and children handled the breaking point. They got it.

The documentary, called *The Principal Story*, coproduced by U of I alumnus David Mrazek (AB '86, English), aired in fall 2009 on PBS. Its honest, unblinking portrayal of school life has been well-received by both educators and the general public (an estimated 1.1 million people watched its first airings in September 2009), and across the country it has served as a discussion starter during meetings on school leadership.

Mrazek and the documentary's executive producer, Tod Lending, were hired by the Wallace Foundation to create a documentary that captured the steep challenges faced by principals. They did so by shuttling back and forth between Nash

Elementary and Springfield, Ill.'s, Harvard Park Elementary to show audiences a year in the life of two principals at struggling schools.

The film's wide appeal lies in how it used relatable, emotional footage that addressed specific difficulties faced by educators. The filmmakers—Mrazek operated the microphone, Lending the camera—gained access to intimate and meaningful moments, including when one of Dunbar's students is caught with a knife—("You get or be



U of I alumna Teresa Dunbar was featured in the powerful PBS documentary *The Principal Story*, which was produced by another U of I alumnus, David Mrazek, along with Tod Lending

got," he says)—and when Kerry Purcell, principal at Harvard Park, wept with her students over the accidental death of a classmate.

The key to getting that footage, Mrazek says, was simply devoting lots of time to the project. They were in the schools so often that the staff and students seemed to forget that they were there (though the filmmakers were required to obtain signed consent forms from parents or guardians). After a few days, students stopped waving at the camera and seemed to carry on as usual, even if the camera was almost literally in their faces. Staff grew accustomed to being tailed by the two-man crew.

"There's no way we could have done the film if the principals didn't trust us," Mrazek says. "And it took a lot of courage on their part because they didn't know what was going to happen [with the film]. They're working in schools that are tough,

there's politics. It wasn't in their career interest to let us film in their school but they realized what we wanted to do was show the general public how hard it is to be a principal."

Though the film tells a story, the issue is not merely anecdotal. According to *Education Week*, studies in a number of states indicate that only about half of beginning principals remain in the same job five years after they start, with many leaving the profession altogether. At the same time, the National Association of Elementary Schools reports that according to research, principals are the "primary catalysts" in shaping school improvement.

"It's not a career for the faint-hearted," writes NAESP director Gail Connelly. "Elementary and middle-level principals require wisdom, knowledge, courage, and even a bit of audacity."

Purcell was a veteran who had already dramatically improved performance at her school when the film crew started taping. Dunbar, a relative newcomer, was in the fight of her professional life. There were still similarities between the two, however, as both principals worked more than 12 hours a day, had no children, and both often returned home in the dark to empty houses (Purcell was not married, and Dunbar is married to a similarly-busy spouse).

"It's not a job. It's way beyond a job," Purcell says, in the film. "Sometimes you have regrets because then it becomes your life. But it's worth it, I think."

At some point in the documentary, Dunbar, now in her late 30s, appears to metamorphose from a frazzled beginner to a focused leader. It shows during an interview segment where she explains why she finally forced an underperforming first grade teacher to resign. The teacher had been unable to control her classroom, and yet Dunbar was reluctant to remove her because the teacher had children and an unemployed husband.

What you don't see in the film is the moment she made her decision, in the middle of the night, when it dawned on her that she was doing a disservice to the children by allowing the teacher to stay.



Mrazek (right) and coproducer Lending followed Dunbar through her work day for a year.

# The Wedding Crash

## LAVISH WEDDINGS TAKE A HIT DURING RECESSION

“There came a point where I couldn’t live with myself,” Dunbar recalls, in an interview a few months after the documentary’s release. “Regardless of a person’s economic status, they have the right to have their children educated.... I was a good principal before [the teacher resigned], but I didn’t know what I was doing because I was new. I was hard on my teachers, I had high expectations, but I didn’t follow through.”

While Dunbar still tries to help teachers who aren’t living up to her standards, she is a little less reluctant to remove them now. Since removing the first grade teacher, Dunbar has removed four other underperformers.

It’s been about two years since the film crew left the schools. While Purcell has moved on to a new job, Dunbar’s Nash Elementary has been removed from the closure list, and the school has the most improved test scores and best attendance and discipline of any school in the area. Thanks largely to her reaching out to local residents, the schoolyard is now safe for her students. Gangs no longer break school windows. Dunbar says managing the school is easier now, and her contract was recently extended to 2014.

Thanks to the film, the school has also experienced a rebirth of pride, along with a bevy of donations and community partnerships from people who felt moved by the documentary to help.

Dunbar says the film was accurate—almost too accurate. As a matter of fact, she’s never watched it from beginning to end, because she says it’s too painful for her to relive that time of her life. What also remains to be seen is how much the documentary advances solutions to make an educator’s job easier, so that principals in the future might be spared that pain, too. ■

High-end bridal salons were first introduced in the United States during the Great Depression, says LAS historian Elizabeth Pleck. What’s more, Princess Diana inspired a comeback of the Cinderella wedding during the peak of the recession in the early 1980s—all of which seems to indicate that lavish weddings are recession-proof.

Not so, says Pleck, who teamed with Cele Otnes, a professor of business administration, to look at the dollars and dreams attached to weddings. The current recession has hit the wedding industry hard with the average U.S. wedding costing about \$19,580 in 2009—a dramatic drop from \$28,730 in 2007, according to the *Wedding Report*.

“Rituals are the last things to topple in a recession because they keep families together,” says Otnes. “But this recession has been deep.”

The result has been resurgent cost-consciousness, as couples look for any way to trim the budget and still retain the sense of lavishness—such as replacing full dinners with dessert receptions.

“A dessert reception is still kitschy; it’s still cool because there is a theme,” Otnes says. Although the desserts offered at such receptions are deluxe, they still carry a much lower price tag than serving beef Wellington or lobster Thermidor.

More and more brides are buying wedding gowns off the rack, rather than custom gowns. And some couples are replacing lobster and caviar with traditional American comfort foods, such as chicken and fish. Some couples are even imitating Japanese tradition by staging their cake-cutting photos using a lavish-looking, but inexpensive, artificial cake made out of Styrofoam and coated

with icing. Then, during the reception, they serve slices of a modestly priced sheet cake.

Ironically, Pleck and Otnes say, another way to lower costs is to hold a destination wedding at an exotic locale. Fewer guests attend, and a shorter guest list cuts the cost of the most expensive aspect of a wedding—the reception.

“If Aunt Ethel can’t come because she’s not going to pay for the flight and hotel in Cancun, it’s cheaper for you,” Pleck says.

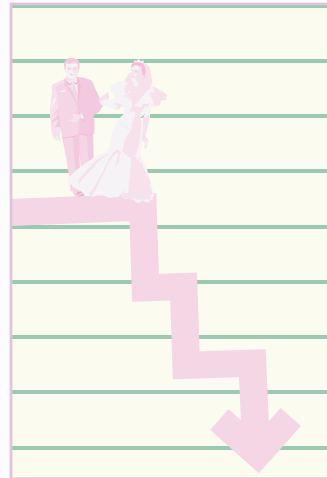
Some people are delaying their weddings, while others are setting their money aside for a house, rather than using a large chunk of their savings for their wedding day. In the wake of the recession, “some people were fairly concerned that they may never get the

house,” Otnes says. “So they’re turning to simpler weddings and saving for a down payment.”

In previous generations, Pleck adds, couples married young and then began acquiring household possessions. But today, the wedding has become a capstone event that comes *after* the man and woman have acquired a house, furniture, and other things.

Although the lavish wedding has hit a major speed bump in this recession, Pleck and Otnes still see it as a lasting cultural icon because it makes “the perfect marriage” between our consumer culture and our ideal of romantic love.

People are still looking for a special experience that shows they have been transformed by a singular event, Pleck says. “It’s as if this transformation takes place in the way that a fairy godmother waves a wand over you and sprinkles her magic dust. You are moved out of ordinary time into magic time.” ■



# Faith in No Man's Land

For many soldiers, the horrors of World War I strengthened their belief in God.

By Dave Eversen

Years after the Civil War, William Tecumseh Sherman uttered, “war is hell,” which sounded all the more memorable coming from a Union Army general whose troops burned their way across Georgia in 1864. The quote spoke to the widespread impression that war disillusioned and diminishes the faith of those who conduct it. But does it really?

Jonathan Ebel would argue that in many cases, it doesn't. In fact, the assistant professor of religion at the U of I has studied American soldiers' experiences of World War I extensively, and he believes that “the Great War” confirmed for many the belief that war is a meaningful and redemptive experience. Many Americans who helped fight World War I interpreted the war through their Christian faith, and after returning home they set about with renewed, often militant, vigor to shape the country.

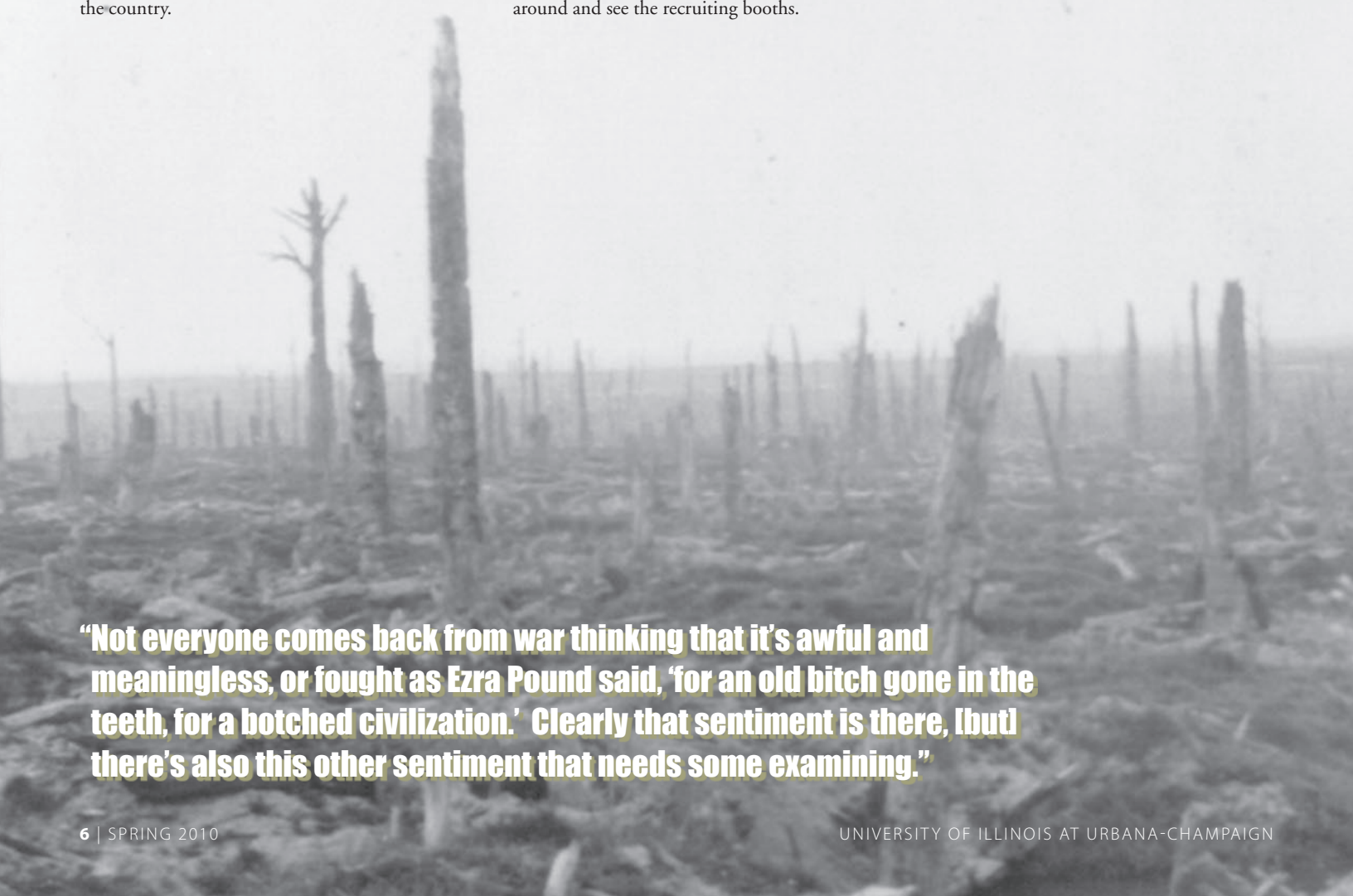
Ebel, a former U.S. Navy intelligence officer, became interested in war and religion in graduate school, where he studied American evangelist Billy Sunday's revival campaign after the United States entered World War I in 1917. American pulpits emitted a strong pro-war sentiment at this time—ironically most vociferously by liberal pastors, who saw the war as a chance to end war—and by then Sunday was the most famous pro-war preacher, known for waving the American flag during services and otherwise portraying the war as, in his words, “hell against heaven.”

One feature of Sunday's revival campaign, Ebel says, is that the preacher allowed the U.S. Army and Navy to set up recruiting booths in the back of the revival tent. After the altar call, during which congregants would come forward and declare themselves for Jesus Christ, they would turn around and see the recruiting booths.

“And it just struck me that it would be interesting to follow that through,” Ebel says. “Maybe some of those guys did go to the recruiting booth and went off and fought. What would they think afterward?”

To answer that question, Ebel studied scores of memoirs, diaries, letters, surveys, and other documents across the country containing the thoughts and opinions of soldiers, nurses, and others of various religions and races after World War I. One thing he has learned is that, contrary to the old saw, there are indeed atheists in foxholes. But another thing is that World War I often strengthened faith.

The war was among the first—and to that point the most devastating—where soldiers fought an enemy they couldn't see (according to one estimate, artillery was responsible for 67 percent of combat casualties in World War I). The distant forces dictating life and death left World War I particularly open to religious interpretation among soldiers. Ebel says many American soldiers



**“Not everyone comes back from war thinking that it's awful and meaningless, or fought as Ezra Pound said, ‘for an old bitch gone in the teeth, for a botched civilization.’ Clearly that sentiment is there, [but] there's also this other sentiment that needs some examining.”**



embraced a militant Christianity and “imagined they were modern incarnations of the Crusaders.”

“How did [veterans] make sense of death?” Ebel asks. “There are quite a few American soldiers who thought of themselves as imitators of Christ. Suffering to redeem the world. Suffering to save the world as Christ had done.”

He found an old survey of African American World War I veterans in Virginia that included a question about how the war affected their religious beliefs. Time and again, the response was that it strengthened it, a sentiment that was echoed in other materials he found. Some did have their faith shattered, Ebel says, but he focused on those whose faith was strengthened or reanimated—and there were many of them. After the war, of about 4 million eligible veterans, a quarter of them joined the American Legion, which wielded significant political sway and portrayed the war as a religious struggle, Ebel says.

The American Legion also didn’t disregard violence as a way to improve America, at least in its early days. The organization formed to support veterans after the war, but it was also known for fighting with elements that members thought were dangerous to America—labor unions, “Soviets, anarchists, revolutionary socialists, and every other ‘red,’” declared Legion Commander Alvin Owsley in 1923.

“Not everyone comes back from war thinking that it’s awful and meaningless, or fought as Ezra Pound said, ‘for an old bitch gone in the teeth, for a botched civilization,’” Ebel says. “Clearly that sentiment is there, [but] there’s also this other sentiment that needs some examining.”

For example, Ebel says we may better understand America’s actions in the 20<sup>th</sup> century if we better understand how belief in the redemptive qualities of combat and violence—and how it was weaved into faith in America—persisted after World War I. Ebel can hear echoes of Woodrow Wilson’s American idealism (the World War I president famously called for war against Germany to make the world “safe for democracy”) even now, in the words of presidents George W. Bush and Barack Obama.

Another reason to consider this topic, Ebel says, is that the questions of faith soldiers asked themselves in World War I—Why do some die while others don’t? Who controls it? What happens after I die?—seem to be quite common in warfare. Modern wars after World War I, however, including World War II and Vietnam, largely have not been studied from the religious perspectives of the participants.

“I think most Americans think of war as a primarily secular experience,” Ebel says. “Whether it’s Yorktown or Gettysburg or the Battle of the Bulge, My Lai, you can do that by thinking about authority, about economics, about politics, by thinking about a whole range of things that don’t have much to do with religion. But I don’t think we fully understand wars if we don’t spend some time thinking about the religious dimensions of it.” ■



Images: U.S. Department of Defense





# Drumk Weather



# Monsters

## Frankenstein, Shakespeare, and snow in July.

By Doug Peterson

“We will each write a ghost story,” the poet Lord Byron famously announced in 1816.

Byron, along with Mary and Percy Shelley, was spending the summer of 1816 in Switzerland, but the weather was the strangest anyone could remember. It was bitter cold and stormy, with freezing rain and lightning. There were even reports of snow in July.

The freakish weather drove them indoors, where the three of them made a pact to each write a ghost story. Mary Shelley proceeded to write *Frankenstein*, the most famous monster tale of all time—the creature forever associated with bizarre and gloomy weather.

What Shelley did not know is that the monstrous weather of 1816 was triggered by one of the greatest volcanic eruptions in recorded history—the eruption of Mount Tambora in Indonesia, says LAS English professor Gillen D’Arcy Wood.

In April of 1815—only a matter of weeks before the Battle of Waterloo—Mount Tambora erupted half a world away, ejecting 35 cubic miles of volcanic dust, sulfate gases, and rocks up to 25 miles into the atmosphere, Wood says. To put this in perspective, Mount Vesuvius ejected 6 cubic miles of debris in 79 A.D., while Mount St. Helens ejected 0.24 cubic miles of debris in 1980.

“Volcanologists describe the Mount Tambora eruption, in their terms, as ‘super-colossal,’” Wood points out. “It is the only eruption of that magnitude since human civilization emerged 10,000 years ago. And yet it has been little studied.”

At ground zero, the eruption killed 90,000 people in Indonesia. The cloud of volcanic ash that spread around the world affected the climate for three years, creating famine and chaos everywhere from India and China to Europe and New England.

*continued*



# Frankenstein's Weather

“What is lacking in a lot of the current public debate over climate change is historical consciousness,” Wood says. “We need an historical dimension to understand the relationship between human societies and climate.”

That is why Wood has been studying the Tambora eruption from every angle—politics, agriculture, and even literature and painting. He is also working with University of Illinois atmospheric scientist Don Wuebbles to create a computer model tracking the spread of volcanic ash around the world following the Tambora eruption.

According to Wood, it is “something of a scandal” how little climate has been considered in the humanities over the years. He attributes this to an overcorrection in response to a philosophy known as climate determinism prevalent in the 18<sup>th</sup> century and even into the 19<sup>th</sup> century.

“Climate determinism argued that the characteristics of human populations are determined by their geography and environment—in particular, by climate,” Wood explains. “People believed, for instance, that those living in the tropics were lazy and more susceptible to tyranny because of the climate—the humidity. They also thought the superiority of northern Europeans lay in the temperate nature of their climate.”

“Forms of environmental determinism are so obnoxious that people in the humanities have shied away from climate completely,” Wood adds. But all of that is beginning to change, as the climate controversy makes its way into the humanities, particularly at the U of I.

Just this past December, fellow U of I English professor Robert Markley was in England delivering a talk at Oxford University about conditions in England during the Little Ice Age. As if on cue, the heavens dumped 10 inches of snow on Oxford thanks to a classic Little Ice Age weather pattern.

“I was at a conference talking about the Little Ice Age and experiencing it at the same time,” he says.

Ten inches is a rarity in modern England, but William Shakespeare would have been quite familiar with frigid temperatures, for arctic air bore down on England with bone-chilling ferocity in the 17<sup>th</sup> century, says Markley. As Shakespeare once wrote, “Rough winds do shake the darling buds of May / And summer’s lease has all too short a date.”

The Little Ice Age was not technically an Ice Age, but was a period extending from about the 1400s to the mid-19<sup>th</sup> century, when the average temperature dropped 1° Celsius, or 1.8° Fahrenheit. This may not sound like much, Markley points out, but the Little Ice Age—like all climate shifts—included many extreme years that brought frigid temperatures across Europe. The Thames River in London froze solid more than a dozen times during the 17<sup>th</sup> century, something that has not happened even once in well over 100 years.

“There are very few characters in all of Shakespeare who talk about being hot. They talk about being cold, they talk about the wind and the rain,” he says.

“The beautiful paintings of the Rembrandt era also reflect the Little Ice Age, showing people skating on the frozen canals of the Netherlands,” adds Stephen Marshak, U of I geologist and director of the School of Earth, Society, and Environment. “When was the last time you saw somebody skating on those canals? It doesn’t happen.”

Periods such as the Little Ice Age are reminders that climate extremes have cooled and heated the planet throughout many different periods of

## Historical Markers of the Little Ice Age



**1565**  
The Dutchman Pieter Bruegel paints “The Hunters in the Snow.” His winter scenes are inspired by extreme weather.



**1603 to 1606**  
William Shakespeare writes *King Lear*, one of his many plays that dwell on storms and other foul weather.



**1607 to 1608**  
European settlers in North America report that ice persists on Lake Superior until June.



**1608**  
England holds its first recorded “frost fair” on the frozen River Thames.



**1704**  
Daniel Defoe, author of *Robinson Crusoe*, writes *The Storm*—inspired by the Great Storm of 1703, one of the most ferocious to strike England.



**1740**  
The Great Frost leads to bad harvests, starvation, and disease across Europe. Millions die.

# “Forms of environmental determinism are so obnoxious that people in the humanities have shied away from climate completely.”

Earth’s long history. For instance, Marshak says, geological clues indicate that the entire Earth may have been completely frozen more than 650 million years ago, creating what is called “Snowball Earth.” More recently, the Medieval Warming Period was a time when temperatures were similar to or slightly above those of today. The hottest period is believed to be the end of the Age of Dinosaurs, 65 to 145 million years ago.

Despite the historical cycles of hot and cold, Marshak agrees with the conclusion that the current warming trend is human-induced. It’s an anomaly. In fact, Marshak says some researchers argue that, based on the timing of the Milankovitch cycle, the Earth’s present climate should be *cooling*, not warming. The Milankovitch cycle relates periodic changes in the Earth’s orbit and tilt to the amount of solar heating that temperate latitudes receive over a year.

In agricultural societies, such as those during the Tambora eruption, climate change has had far-reaching consequences. According to Wood, when Tambora’s cloud of ash reached India, it disrupted the monsoons, leading to three failed harvests, followed by drought, floods, and famine. Scientists have now explicitly linked these conditions with the outbreak of a new strain of cholera, which appeared in Bengal in 1816 and eventually spread around the world, killing millions.

During the Tambora period of 1815 to 1818, the food shortage, combined with so many men returning from the Napoleonic Wars, created a perfect storm of chaos and unrest as people traveled in search of food. Wood has examined travel literature of the time, which shows that some tourists in Europe even mistook the mass movement of beggars for armies.

Like Wood, Markley does much of his climate research by looking at travel literature, for he says it was the best-selling form of writing before the 1800s. However, Americans in 1816 and 1817 didn’t have to travel to Europe to witness the bizarre weather. The bad weather came to them. In New England, weather disruptions caused by Mount Tambora resulted in the famed “Year without a Summer.”

“The Year without a Summer is the most fabled weather event of the 19<sup>th</sup> century, if not in all of American history,” Wood says. In 1816, New England farmers saw their shortest growing season ever with severe frosts in July. As a result, many farmers moved westward, and the relatively benign growing conditions in the Midwest gave birth to the region as a major agricultural producer.

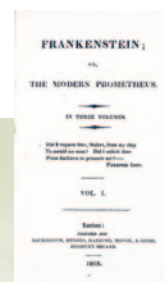
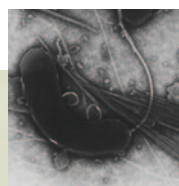
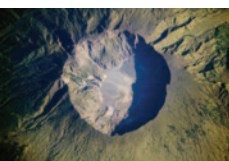
Back in Europe, Switzerland was one of the areas hardest hit by the bizarre weather of 1816 and 1817; and that is precisely where Mary Shelley happened to find herself when she began writing *Frankenstein*. Wood says her time period demonstrates for us today that climate change can have worldwide consequences.

“In the Tambora period, you can see the correlation between climate stress and very negative social effects on governments and society,” he says. “We have a global example.”

According to Wood, the Tambora eruption and the current climate controversy both demonstrate the complex connection between humans and forces beyond our control, such as the weather.

Similarly, “*Frankenstein* is all about the limits of human control,” he says. “And it offers a lesson for today: Our attempts to be masters of the universe can sometimes have devastating consequences.”

## The Chilling Effects of Tambora



**April 1815**  
Mount Tambora erupts in Indonesia, killing 90,000. Ash encircles the globe, affecting climate for three years.

**1815-1817**  
Cold weather creates some of the shortest growing seasons on record in India. Crop failure hits China and creates chaos in Europe.

**1816**  
Volcanic ash in the atmosphere creates spectacular sunsets, captured by the painter J.M.W. Turner. His skylines have a major influence on painting.

**1816**  
Mary Shelley gets the idea for *Frankenstein* while cooped inside during the unusually cold, stormy summer in Switzerland.

**1816**  
A new strain of cholera appears in Bengal, spreading around the world.

**Summer 1816**  
New England suffers the “Year Without a Summer.” Frosts in July kill crops.

**1818**  
*Frankenstein* is published anonymously.

# IS ILLINOIS TURNING INTO TEXAS?

By Doug Peterson

Illinois is drifting toward Texas. Or at least its climate is moving in that direction.

LAS atmospheric scientist Don Wuebbles projects that if current climate trends continue and emissions from a heavy reliance on fossil fuels continue, the summer heat index in Illinois—a combination of temperature and humidity—could feel like that of eastern Texas by the end of the century. In other words: sweltering.

Wuebbles helped lead the first effort to assess the impact of climate change in Illinois and six other Midwestern states, as well as in nine major Midwest cities, including Chicago. The report, issued by the Union of Concerned Scientists, projects that if significant cuts in carbon dioxide emissions are not made, Chicago could bake. By the end of this century, the city could average 70 days exceeding 90° F every summer; and of those days, 30 could top the 100-degree mark.

To put this in perspective, the baseline years in Chicago—1961 through 1990—averaged only 15 days over 90° F and less than two days over 100° F each summer.

By mid-century, the norm could be summers like those in 1983 and 1988, when there were many more hot days, Wuebbles adds. As the Midwest climate report describes it, “The unusual heat of 1988 combined with widespread drought to cause an astonishing \$40 billion in losses to agriculture and related industries nationwide—the United States’ second costliest weather-related disaster in modern times (after Hurricane Katrina).”

The report, which based its projections on thousands of climate measurements going back over 100 years, assumed two different scenarios for the future. The “higher emissions scenario” assumes the world would continue to heavily use fossil fuels, replacing consumption by 25 percent through alternative energy sources by the end of the century, with average carbon dioxide concentrations in the atmosphere reaching 940 parts per million (ppm) by 2100. Current carbon dioxide concentrations are roughly 390 ppm.

Researchers also looked at a “lower emissions scenario,” which assumes a much more dramatic switch to alternative energy sources—a cut in fossil-fuel consumption closer to 80 percent. This would put average carbon dioxide concentrations at 550 ppm by 2100. Under this scenario, Chicago might average closer to 35 days over 90° F, rather than 70 days; and southern Illinois might feel more like New Orleans than east Texas by 2100.

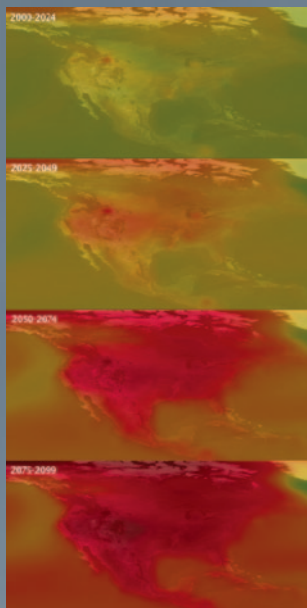
Carbon dioxide, the most notorious greenhouse gas, traps heat in the atmosphere, acting like a blanket. It and other greenhouse gases make Earth comfortable and habitable for life, Wuebbles says. “But we’re now adding an extra blanket,” he says, and the increased heat could affect severe weather and the potential for floods and droughts.

Under the high scenario, the report predicts one-third more precipitation during winter and spring, but about 10-percent less rainfall during the summer by the end of the century. What’s more, Wuebbles says the rain will fall in the form of much heavier storms, which drop more than 2 inches at a time. This could translate into increased flooding.

For Illinois agriculture, all of this means more heat stress on animals and crops, unless genetic modifications make the plants more adaptable to higher heat and drought. Changes in temperature could also increase the risk of certain pests, such as corn borers, especially in southern Illinois.

According to Wuebbles, seven Midwest states combined emit more carbon dioxide than any nation on Earth, except for Russia, China, and the United States.

“The physics say that these emissions are going to heat the Earth’s atmosphere,” he says. “That doesn’t mean it is going to heat everywhere the same. But overall the climate has to warm. The physics is as simple as that.”



If climate and emissions trends continue, Illinois could feel like eastern Texas by the end of this century. Chicago could average 70 days exceeding 90° F annually.



# Blazing Tundra

Retreat of sea ice feeds largest tundra fire in 5,000 years.



Bureau of Land Management

It started with a bolt of lightning.

A lightning strike on July 16, 2007, triggered a fire that swept across an area of Alaska's vast, treeless tundra on the North Slope. The Anaktuvuk River fire was larger and hotter than the tundra fires that typically creep across the plain of northern Alaska. In fact, LAS plant biologist Feng Sheng Hu has now discovered it was the only large tundra fire in that area of Alaska in 5,000 years.

Fed by unusually warm and dry conditions in arctic Alaska, this tundra fire did not burn out until the beginning of October 2007, and by that time it had consumed over 600 square miles. But although lightning might have been the trigger, Hu says the real culprit is probably climate warming and the retreat of sea ice.

Sea ice reflects the sun's rays, helping to keep temperatures cooler, he explains. But when sea ice retreats—as it has in the Arctic—that leaves open water, which is darker and absorbs the sun's heat. This heat is then released back into the atmosphere during late summer and early fall, further boosting temperatures and setting the stage for tundra fires.

"The tundra has always had small fires, but big ones have been very rare," Hu says.

In their research, Hu and his University of Illinois team often look far back in time, trying to determine what the climate was like thousands of years ago and how it affected plants and other life. This helps them to understand just how unique today's warming is, and whether it fits into a natural cycle or is human-induced.

In addition to Alaska, Hu and his students have conducted research in other places, including Siberia, Africa, and Australia. They use a wide array of tools such as pollen identification, DNA sequencing, computer modeling, and isotope geochemistry.

In the case of the Alaskan tundra fire, Hu's team set up floating platforms on two lakes within the region burned by the Anaktuvuk River fire. From these research rafts, they drove steel poles into the bottom of the lakes, pulling up sediment samples. Then they analyzed the sediment for charcoal particles, which would be present at different layers if tundra fires had occurred there in the past.

Hu looked back 5,000 years and found no trace of charcoal, showing that there hadn't been a tundra fire in that region during the entire five-millennia span until the Anaktuvuk River fire in 2007. He also says that if you look at records over the past 30 years, you see a steady decline in sea ice, while tundra fires appear to have increased correspondingly.

"We're probably looking at a prototype of future changes," he adds. "If our hypothesis is right, we'll see more tundra fires." This in turn might increase soil greenhouse emissions, change the types of plants in the tundra, and negatively impact the livelihood of indigenous peoples.



Feng Sheng Hu (right) holds a core of sediment pulled from an Alaskan lake. The sediment offers clues about past tundra fires. With him is the helicopter pilot, Gerard Loidl.

## Politics Often Undermines Even the Best of Environmental Agreements

**A caution to nature-lovers: At the intersection of politics and nature, politics usually wins, even over the best intentions.**

"Politics screws up outcomes that everybody says they want," says political scientist Robert Pahre, whose environmental research and teaching has focused on national parks and issues along their borders.

Agreements are made to maintain sustainable populations of wildlife, for example, "yet it's almost never true that we get that result," Pahre says. In combining the needs of biology with the realities of politics, the outcome is almost always biased against what is sustainable. For example, the complete failure in the international management of bluefin tuna, and similar failures, may result in many seafoods disappearing from dinner plates within two decades.

Likewise, even though the U.S. has set aside national parks, the needs of people almost always outweigh the needs of nature. In many cases, parks are too small to accommodate their animal populations, and predators have periodically been hunted down, he says. Scenic mountains and alpine habitats are set aside, but not many rivers and no tallgrass prairies. National forests and other federal lands are often managed with timber, mining, and grazing interests in mind.

Even in the renewed environmental interest in recent years, nature gets ironically little attention, Pahre says. Much of the environmental focus is ultimately about urban issues or energy, and is really about using resources more efficiently in ways that benefit humans.

"It just seems like an impoverished view of what the environment is or what the planet is," he says, and maybe not as motivating as experience with nature to change attitudes about the environment.

# Volcanoes, Quakes, Floods, Mudslides...

## Costa Rica will be ready for anything, thanks to Illinois' input.

By Doug Peterson

In the summer of 1968, villagers living near the Arenal Volcano in Costa Rica noticed that temperatures were rising in the hot springs. Authorities believed that Arenal was extinct until a July 29 eruption unleashed ash, lava fragments, volcanic gases, and superheated air, which can reach mind-boggling temperatures of 1,600° F.

The eruption killed more than 80 people in three villages. Ever since that day, Arenal has been one of the world's most active volcanoes, although no eruption since has been as deadly as the one in 1968. It's no wonder that Costa Rica, with over 100 volcanic formations and seven active volcanoes, is part of the aptly named Pacific Rim of Fire.

In the wake of a more recent volcanic eruption in Costa Rica, burn victims were rushed to the nearest emergency room—standard operating procedure, says LAS communication professor Marshall Scott Poole. The problem is that the most severely injured victims should have been routed to the country's central burn hospital.

This incident spurred Costa Rica to form a new emergency response system, and they have turned to the University of Illinois for assistance in designing it.

Costa Rica has four major national hospitals, 13 regional hospitals, and several hundred local clinics, says Poole, who is helping to design the system along with Kevin Franklin, executive director of U of I's Institute for Computing in Humanities, Arts, and Social Science, and colleagues from the National Center for Supercomputing Applications. Under normal conditions, Costa Rican hospitals operate independently. But when disaster strikes, the hospitals will come together as one unified "virtual organization"—a large organization tied together by information technology.

For example, Poole says, one vital element will be a system that keeps track of medical inventories in all of the hospitals. When emergency personnel begin transporting victims, they will know which hospitals can handle different patients. Doctors will also be alerted to which patients are coming and what injuries they have sustained.

Volcanoes are only one of the threats to Costa Rica, however. The country, known for its lush scenery, is also susceptible to earthquakes, mudslides, hurricanes, and floods. In 2009, for instance, an earthquake in northern Costa Rica claimed at least 34 lives.

"I saw how the Earth moved and how it took my family—my aunt, my cousin, and her babies," one man told CNN. "It was very hard because I wanted to save them, but I couldn't."

Poole says the Costa Rican emergency response system will be prepared to handle any one of these disasters. But it will take a keen understanding of how large groups work—something for which Poole is internationally known.

Poole started his career by studying the dynamics of small groups and then moved on to studying how large groups adopt new forms of information technology. For instance, he examined what happened when the Internal Revenue Service adopted a new computer system to help them generate and rank new ideas. He found that people adapt new technologies to their own situation; but if they are resistant to the technology, they often adapt it in ways that actually undermine the system.

"We're putting those lessons to work down in Costa Rica," Poole explains. He is helping Costa Rican officials identify all of the groups who will be part of the new emergency response system and

is bringing them into the planning process. "We want them involved every step of the way, so they buy into it and make the technology their own."

Poole says large groups are often comprised of several small groups, and these groups are constantly changing and adapting over time, particularly in an emergency situation. He has observed this at work among firefighters at the U of I's Illinois Fire Service Institute. For instance, when three teams spring into action to fight a propane fire, two teams must use their jets of water to battle the blaze, while the third group must spray down the other two teams to keep them cool.

"I'm interested in how smoothly they coordinate that," Poole says. "What do they do to make them effective?"

Like most effective groups, firefighters coordinate these complex actions by following clearly delineated rules and procedures. But problems can arise when subgroups within the larger group have different goals and follow conflicting procedures. When police and firefighters are called to a suspicious fire, the goal of the police is to keep the crime scene from being disturbed, while firefighters simply want to put out the blaze—and that often involves stomping around on the crime scene.

In Costa Rica, they are trying to prevent these conflicts by establishing a hierarchy of goals, balancing one group's objectives with another's.

Another key to the Costa Rican system will be getting the groups to practice simulated emergencies together. In the Netherlands, researchers observed that when there was an overload of injured people, police and fire crews stood around while the emergency management technicians did their job. Poole says there might have been ways for the

police and firefighters to pitch in if the groups had practiced together regularly.

"The technology piece is often the easy part in a new system," he points out. "It's the people part that is hard." ■



Communication professor Marshall Scott Poole is helping Costa Rica plan a new emergency response system.

**"We want them involved every step of the way, so they buy into it and make the technology their own."**



# ACROSS THE DECADES

By Dave Evensen



A GIFT FOR THE AGES  
THE LINCOLN HALL  
PROJECT



A LEGACY HONORED. A FUTURE PRESERVED.

This is the second part in a series examining the evolution of higher education since the construction of Lincoln Hall. We will explore this topic further as the building's renovation continues.



## FACES FROM CHICAGO TO CHINA

Of 3,281 students who enrolled in 1911, some 656 were women. Roughly three-quarters of students came from Illinois, with a majority coming from the northern half of the state. More students came from Chicago than any other city, but students hailed from every corner of Illinois, including a bevy of tiny farm towns such as Oblong, Indianola, and Holder. Foreign students composed a small percentage of total enrollments, with many of them Chinese (57 in 1911) who took advantage of the Boxer Rebellion Indemnity Program, in which the United States offered college scholarships to China to settle a debt. Other students came from Europe, India, Mexico, Cuba, Japan, Paraguay, the Philippines, and elsewhere. Students in 1911 included Mark Van Doren, future Pulitzer Prize-winning poet and critic, and the son of Indian poet, playwright, novelist, and musician Rabindranath Tagore, who lived on campus for a few months and was later the first non-European to win the Nobel Prize in literature.

## STUDENTS AT EDUCATION'S NEW DAWN

The opening of Lincoln Hall in 1911 came during a defining moment at the University of Illinois. It was a progressive era for education, as more and more people regarded it as necessary for a stable and yet rapidly expanding society that needed educated citizens. As a result, universities were growing as never before.

The proportion of young adults attending college in 1911 was still low—less than 10 percent of the college-age population in America went to college at that time—but the trend was pointing ever upward. Between 1870 and 1920, the number of higher education institutions doubled to almost 1,050, and national college enrollment doubled between 1890 and 1910 to 300,000.

The reasons are many. New measures such as compulsory school attendance and tax-funded high schools led to an explosion in the number of high schools and the number of young men and women eligible for college. Meanwhile, modern social sciences and other academic disciplines were on the rise, and federal and state assistance to higher education increased as universities proved they could produce graduates with practical skills and new insights.

College lore was growing, and stories such as Owen Johnson's popular 1912 novel *Stover at Yale*, which depicted undergraduate life, fueled the interest. Universities made themselves more appealing by such measures as discarding prescribed curriculums in favor of electives. At the U of I, offerings advanced in part because residents felt their land-grant school should be just as good as the new John D. Rockefeller-founded University of Chicago.

How was the U of I faring in 1911? In many ways, it was beating national trends. Alumni who returned to the U of I campus just a few years after graduation said they hardly recognized it for all the expansion. The University's growth during the early 20<sup>th</sup> century was punctuated by the construction of some of its most iconic buildings and enrollment that increased by more than 600 percent between 1890 and 1911. The U of I's reputation grew, also.

"I like the way the students put their heart into their work in the University of Illinois," wrote author Edwin Slosson in his widely read 1910 book, *Great American Universities*. "Their studies are to them not a thing apart from their real life, but a part of it. They take pride in their profession; they put sentiment into it and get amusement out of it."

This is a profile of the U of I from the student's perspective when Lincoln Hall was being built. It's also a look back at the students themselves.

*continued*

Sources: University of Illinois Archives; Winton Solberg, professor emeritus of history, University of Illinois; Timothy Cain, assistant professor of educational organization and leadership, University of Illinois; *Great American Universities*, by Edwin Emery Slosson. Images courtesy University of Illinois Archives



## STUDENTS OF 'ALL CLASSES'

Tuition in 1911 was just \$24 per year, or roughly \$525 by today's standards, which made the U of I widely accessible, although at this time many people still decided that they needed their college-aged children working instead of going to school (students spent \$350 to \$450 per year in living and enrollment expenses). Administrators took pride in saying they educated students of "all classes," and indeed, a campus historian says students were primarily middle class. According to data from 1912 to 1913, about a quarter of students came from farms; others came from parents in mercantile and manufacturing (22 percent), professionals (12 percent), finance and business management (12 percent), and skilled and unskilled laborers (9 percent). Alumni records indicate that roughly two or three dozen African American students were on campus during Lincoln Hall's construction. Data is not clear on other minorities, although historians say U of I students in 1911 were primarily white and Protestant.



## GETTING HERE

The rail depot was a busy place for the start of class in late September, as most students arrived by railroads, including the Illinois traction system—a streetcar system from Danville to Springfield. Some student groups met incoming freshmen at the depot and helped them settle into their new community. The trains were reliable. Letters home could reach Chicago faster than they do today.

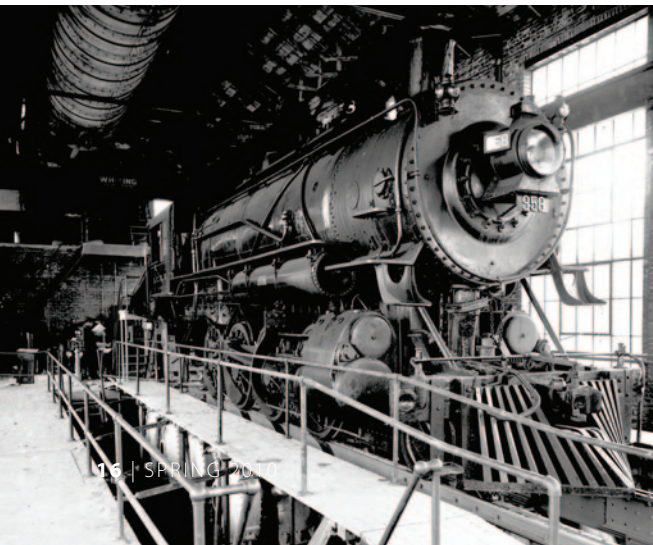
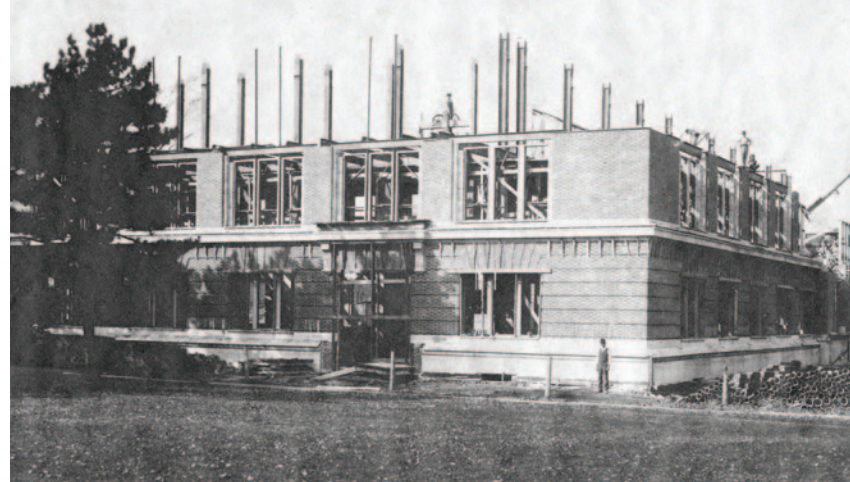


## WHERE THEY LIVED

There were no student dorms on campus in 1911. Students lived in places such as boarding houses (both private and those run by churches), the YMCA, and in the many fraternity and sorority houses around campus. Men and women lived in separate buildings. Students in those days could expect to spend about \$8 per month on rent.

## WITNESSES TO A BUILDING BOOM

Students at the U of I in 1911 studied in a much smaller place than today. Campus had just 30 buildings (compared to more than 280 buildings today), but the University was in the midst of a building boom led by then-President Edmund James, who is remembered for working extensively with the state legislature to advance the University's cause. Between James's being named president in 1904 and Lincoln Hall's opening in 1911, state appropriations to the University almost quadrupled to nearly \$1.9 million (in 1911 the University received 80 percent of its income from the state; today that figure is 17 percent of its operating budget). Under James, plans for a Quad took shape, and several prominent buildings were erected, including the English Building (then called Women's Building) in 1905; Foellinger Auditorium (then called the Auditorium) in 1908; and Henry Administration Building (then called the Commerce Building) in 1912.



## HOUSEHOLD SCIENCE, RAILWAY ENGINEERING, AND MORE

Incoming freshmen were required to take courses such as rhetoric, chemistry, mathematics, foreign languages, military drill (for men), and physical training (or physiology for women). Upperclassmen could expand their studies in areas such as European history, philosophy, sociology, romance languages, English, chemistry, business, astronomy, railway engineering, ceramics, household science, music, animal husbandry, and many other areas. In 1911 the College of Engineering conferred the most undergraduate degrees (202) of any college, followed by the College of Literature and Arts (148), which would merge with the College of Science in 1913 to form LAS and become the largest college. Students at the U of I needed a 70 to pass a course, although if they scored less than a 75 in more than one-quarter of their courses, they could not graduate. Freshmen and sophomores would be dropped from a course automatically if they skipped more than one-eighth of the class periods.



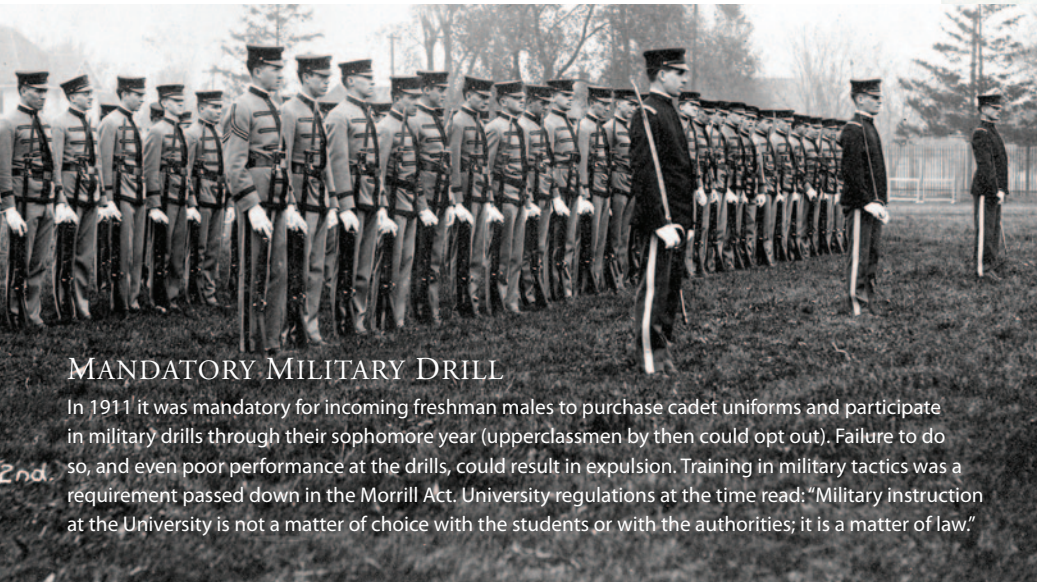
## NO DRINKING, BUT LOTS OF DANCING

Alcohol was abolished on campus and in town by the time Lincoln Hall was built, but by all accounts the U of I was still a rollicking place where students had plenty of activities on their social calendars. Literary societies were popular, and student publications such as the *Daily Illini*, the *Illio*, and the *Siren* (a humor magazine written by women) were well-read. Theater, bands, and other performances were also popular (the Maypole Dance drew crowds of thousands, rivaling those of football games). Campus was in the grips of a "dancing craze," according to one historian, with the waltz and two-step as the dances of choice at the numerous college, class, fraternity, sorority, and club balls. Students would also travel by train to spend a quiet afternoon picnicking in surrounding towns, parks, and fields. Some spent weekends hiking miles across the surrounding countryside.



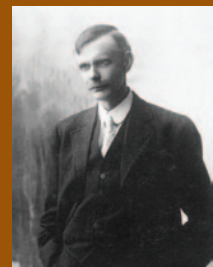
## BIG-TIME SPORTS

The U of I's baseball, football, and track teams enjoyed a devout student following. By 1911, the Homecoming tradition was one year old, the U of I had been in the Big Ten conference for 15 years, and some of the biggest names in U of I's sports history walked campus. There was George Huff, the legendary baseball coach after whom Huff Hall is named. In 1913, the year of Lincoln Hall's dedication, the U of I hired a young coach named Robert Zuppke to turn around a foundering football program. He went on to win four national championships, and the field at Memorial Stadium is named in his honor.



## MANDATORY MILITARY DRILL

In 1911 it was mandatory for incoming freshman males to purchase cadet uniforms and participate in military drills through their sophomore year (upperclassmen by then could opt out). Failure to do so, and even poor performance at the drills, could result in expulsion. Training in military tactics was a requirement passed down in the Morrill Act. University regulations at the time read: "Military instruction at the University is not a matter of choice with the students or with the authorities; it is a matter of law."



## DISCIPLINE BY A DEAN WITH SPIES

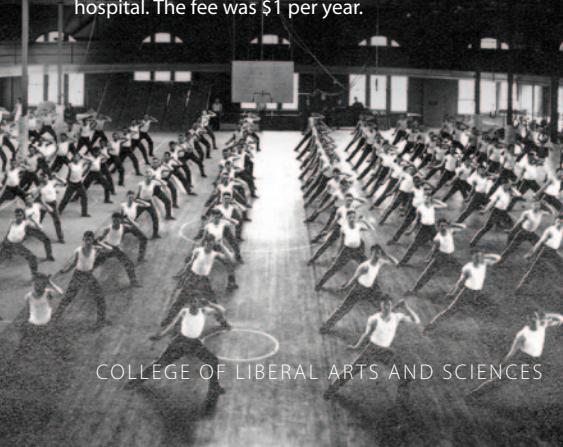
One of the more colorful campus characters in 1911 was a dean named Thomas Arkle Clark. After Clark retired in 1930, *Time* magazine wrote that he "invented and made famous" the job of dean of men. Known for his gaudy tastes, manipulative manner, and an enormous memory for names and detail, Clark was in charge of discipline and rooting out hazing and campus hooliganism, including that of a secret student fraternity that he fought for years. Historians are fairly certain he created a spy network on campus, as he had a knack for showing up when trouble was brewing.

## A SIMPLER, CHEAPER FORM OF HEALTH INSURANCE

Health threats were different in 1911—athletics and social events were canceled in 1914 due to scarlet fever—but a trip to the doctor could still break a budget. To ease the financial risk, students paid into a Hospital Fund Association, which paid medical bills for any member who went to the hospital. The fee was \$1 per year.

## GROWING REPUTATION FOR RESEARCH

Edwin Slosson listed the U of I as one of the country's top 14 schools in 1910, but he wasn't the only one taking notice of what was happening on the Illinois prairie. The U of I was beginning to be regarded as one of the leading research institutions in the country. In 1908, the U of I was invited to join the Association of American Universities, which was an organization of prestigious research universities that wanted to raise standards in the face of European skepticism of American higher education. Importantly, the U of I also was making a name for itself among prospective students.



### Professors Receive Nation's Highest Academic Honors



Acclaimed novelist and English professor Richard Powers was recently elected a member of the American Academy of Arts and Letters, considered one of the highest formal recognitions of artistic merit in the U.S. Members are elected to the academy for life, and the roster of academicians includes such literary giants as John Cheever, Carl Sandburg, Edith Wharton, E.L. Doctorow, Joyce Carol Oates, and Elie Wiesel.

Powers has garnered numerous awards and honors throughout his career, including the National Book Award for fiction in 2006 for his ninth novel, *The Echo Maker*. He is also a Fellow of the MacArthur Foundation and of the American Academy of Arts and Sciences.



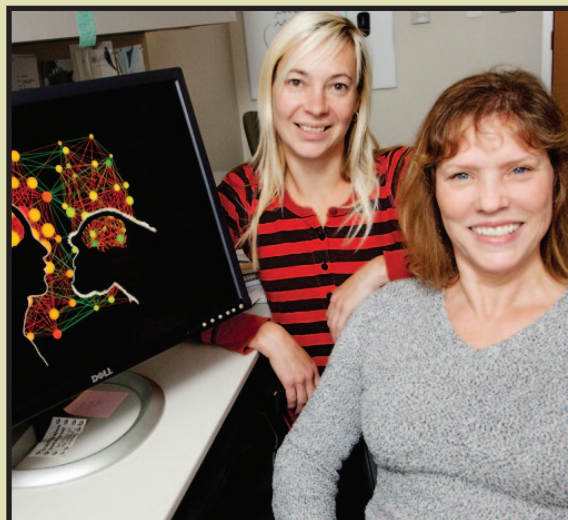
Chemistry and physics professor Martin Gruebele was among 229 new members named to the American Academy of Arts and Sciences. The academy is one of the longest-standing honorary societies

in the nation whose ranks include Albert Einstein, Ralph Waldo Emerson, and Benjamin Franklin, among many others.

Gruebele has distinguished himself in chemical and biological physics with laser manipulation techniques and computational modeling that have increased understanding of protein folding, chemical bonds, and molecular energy flow.

### LAS Student Wins Goldwater Scholarship

Kamil Stelmach, a junior who is triple-majoring in integrative biology, chemistry, and astronomy, has been named a recipient of the prestigious Barry M. Goldwater Scholarship for the 2009-2010 academic year. The award will help him finish his undergraduate studies and prepare for graduate school, where he hopes to pursue research in microbial ecology and evolution.



### Researchers Uncover Core Differences Between Chimp and Human Brains

Size isn't all that matters when it comes to the brains of chimpanzees and humans.

Humans have significantly larger brains than chimps, especially in the forebrain region. But U of I researchers have found that the way genes are expressed in the brain sets humans apart from chimps in even more dramatic ways.

Chimps and humans share most of the same genes, says

Lisa Stubbs, a professor of cell and developmental biology. And by examining these common genes her team was able to find key differences in the way a group of genes known as transcription factors, or TFs, are expressed. The TF cluster that Stubbs' team zeroed in on works together to control genes responsible for energy metabolism in the brain, which is much different in humans than in chimps.

Because human forebrains are bigger, human neurons must stretch long distances to be able to connect with other brain cells. This, in turn, means that the mechanisms needed to transport proteins along the extended neurons are more highly expressed in human brain tissue than in chimp brains. Changes in the organization and expression of TF genes make these metabolism marvels possible.

The research sheds light on brain disorders that can result when the system goes wrong. For example, the TF network also regulates a system in the brain that prevents "free radical" oxygen—a byproduct of increased metabolism—from damaging cells. The breakdown of this system has been implicated in many brain disorders, including Parkinson's and Alzheimer's.

### Drug Abuse in Adolescence May Impair Adult Working Memory

A recent study led by psychology professor Joshua Gulley indicates that amphetamine abuse by adolescents can lead to potentially significant memory loss as adults, even long after they've stopped taking the stimulant.

The findings, based on animal studies, were most pronounced in short-term or "working" memory when high exposure to amphetamines occurred during adolescence.

"Adolescence is a time when the brain is continuing to develop into its mature form,



so drug exposure during this critical period could have long-lasting, negative consequences," Gulley says.

Gulley cautions that their study looked only at binge-type behavior and the consumption of significantly higher levels of amphetamines than

would be prescribed. Further research is necessary to tease out any potentially negative consequences of therapeutic doses, such as for attention deficit hyperactivity disorder.

## Artificial Nose Can Detect Problems in Coffee Batches

Advertisers have told us over the years that coffee “is the best part of waking up” because it “tastes as good as it smells.” Now, chemists at U of I have come up with a way to scientifically determine whether a particular batch of coffee truly is as good as it smells.

A variation on the U of I’s well-known artificial nose can distinguish among 10 different popular brands of coffee, says LAS chemistry professor Ken Suslick. What’s more, the device can tell the difference between coffee beans that have been roasted at different temperatures and for different lengths of time. It can even distinguish, instantly and accurately, whether a batch of coffee has any problems, such as burnt flavors. It’s a system the industry has been trying to develop for years.

The biggest obstacle to this kind of system has been distinguishing among coffee’s more than 1,000 different compounds. Suslick’s artificial nose solves this problem by using a printed array of 36 dyes, each of which changes color depending on its chemical environment. When the array is exposed to an odor—in this case, coffee aroma—the resulting pattern of color changes is unique to that aroma, no matter how complex the chemical mixture might be. It’s like a “molecular fingerprint.”

This system could be invaluable in helping producers check batches of coffee for quality control. It is also capable of detecting a wide range of hazardous industrial gases, even at very low concentrations.



Suslick credits his 17-year-old son, Benjamin, for spearheading the project. He is a senior at University Laboratory High School, the first author on the project’s research paper, and a coffee drinker.

“Actually, I prefer tea,” Suslick says.

## Political Personalities

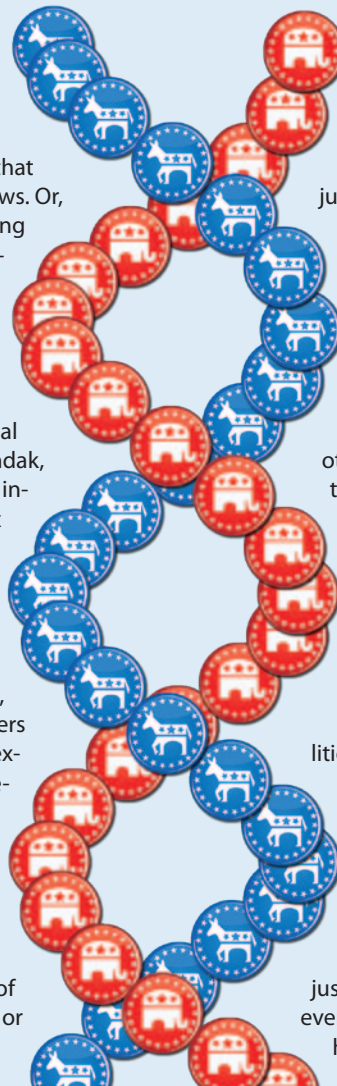
It’s not often that political science is the stuff of a folk song, but if you know Jeffery Mondak’s research, you’ll understand why it lends itself to a good tune. Like music, it might help bring people together.

The U of I professor of political science believes that people are born predisposed toward their political views. Or, as popular folk singer Christine Lavin voices in her song “Hardwired,” cowritten with Mondak: “After years of research the knowledge they’ve acquired / Has scientists thinking we might just be hardwired / Hardwired to be liberal with an open trusting mind / Hardwired to be conservative with a different view of mankind....”

Not that Mondak’s findings can be encapsulated in a single song. Lavin wanted her song to soothe political tensions, and for help, she turned to her friend, Mondak, who has long studied how political views might be influenced by biological forces. The topic is complex enough that it took Mondak, a typically fast writer, 13 years to produce a book about it (*Personality and the Foundations of Political Behavior*).

It’s a relatively new avenue of research made feasible in part by advances in psychology that more clearly define personality. Over the past 20 years or so, psychologists have determined that personality clusters into dimensions called the “Big Five”—openness to experience, conscientiousness, extraversion, agreeableness, and emotional stability.

“[Psychologists] kept finding over the course of many studies, over the course of many decades, that there were these five core dimensions that kept coming up,” Mondak says. To researchers, that meant that instead of needing hundreds of survey questions to measure personality, you could represent much of what we mean by personality with as few as five, 10, or 15 questions, he says.



This has broad implications, and, in political science, it means that a person’s personality can be more easily compared with his or her political behavior. Mondak wrote self-assessment surveys that people could fill out while waiting during jury duty, for example, and he found that statistically significant differences between people could be found by asking just a few questions about each of the Big Five personality trait dimensions.

He has analyzed many aspects of political behavior, but what has garnered the most attention is how personality seems to predict political ideology. The link has received a lot of press during the past two or three years as a handful of other researchers besides Mondak have determined the same thing.

In short, research indicates that being open-minded and open to new experiences is generally correlated with being liberal, and being conscientious and responsible is generally correlated with being conservative. Extraversion is not very indicative of ideology—there are outgoing liberals and conservatives alike.

However, there are those—including other political scientists—who believe biology plays no role in political views. But Mondak believes we’re far from being blank slates whose political views are impressed upon us purely by our upbringings or levels of awareness.

As for what that means to him, we’ll refer once again to Christine Lavin: “Expecting either of us to change is unwise / It’s like asking us to adjust the color of our eyes / I feel more understanding even inspired / When I think it could be that we’re all... hardwired....”

# WHO'S GOING TO HOLLYWOOD?

A HOLLYWOOD VETERAN TEACHES THE ART IN THE CRAFT OF TELEVISION WRITING.

By Holly Korab

One reason television writer Dianne Messina Stanley recently returned to the University of Illinois was for the ocean—the waves of cornstalks that are more calming to her than Malibu beach at low tide. After 30 years in Los Angeles, she has a soft spot for big skies, slower lifestyles, and the down-to-earth qualities of the Midwesterners around whom she grew up and attended college.

There is a real goodness to Midwesterners, she says, somewhat embarrassed at her own generalization. “I don’t know...they’re loyal...they tend to have a strong work ethic...I think they bring a lot of heart to their storytelling.”

“Heart” is what this LAS alumna would like to see more of in Hollywood, an industry known for demanding long hours of its writers and offering no job security. Still, she truly loves her job, which she describes as endlessly interesting, and she would like to help open doors for other Midwestern writers. That’s why last fall she taught U of I’s first-ever TV script-writing how-to course.

“I don’t think everything in Hollywood should be written by people from the East or West coasts,” says Stanley, a former history and journalism major who has logged more than 300 hours of writing and producing prime-time TV comedies and dramas, such as *Archie Bunker’s Place*, *The Jeffersons*, *Knots Landing*, *Judging Amy*, and, currently, *Army Wives*. “I wanted students here to at least realize that writing for the large screen or small was an option for them.”

## CRAFT, NOT ART

Writing for TV is a group activity, Stanley says. A team of six to 10 writers gather daily in an unadorned “writers’ room” where together they spin the storylines for a year’s worth of episodes—who dies, who gets divorced, who gets a break. Smaller writing teams—usually one to two people—take turns being the scriptwriters, withdrawing from the larger group to compose the upcoming

episode, while the rest of the team focuses on the storyline for the following show. Then the scriptwriter or writers rejoin the larger group for feedback.

If you are a writer/producer, like Stanley, you also make casting decisions, meet with the director and costumer, “spot” music, and even *occasionally* socialize with stars. “Maybe we go out to dinner. That’s about it. Mostly we work.”

For Stanley’s class, students had to familiarize themselves with all the episodes of *The Closer* and

a section be cut would be akin to ripping out someone’s soul in a poetry class. Such give and take is essential in the fast-paced environment of TV. “Dianne always emphasized that it was about teamwork,” says Eric Anderson, a senior in rhetoric, who recalled Stanley’s insistence on flexibility. “We were all trying to produce the best scripts.”

## EXTREME ECONOMY OF STORY

The most difficult concept for any budding TV writer to grasp, says Stanley, is what she calls the “one-liner.” Outlines for TV scripts begin with scenes reduced to single, descriptive sentences that convey the essence of the scene. This step forces a writer, who is tempted to jump ahead to the fun stuff, like dialogue, to focus on the structure of the story.

Here’s an example: Instead of writing the generic “she falls in love with him,” to describe a scene, Stanley would suggest the more specific: “She watches this brute of a man tenderly pick up a peach in the produce department.”

It’s all about conciseness, extreme economy of story, says Stanley.

“You cut right to the story,” says Anderson, who hopes to head to Hollywood this summer. “There is no time for your character to go off on a monologue.”

Stanley tried to keep the class practical as well as inspirational, believing as she does that TV is where some of the most creative writing is occurring today. Minicucci, who wavered between pursuing poetry or TV, admits that it’s easy to focus on the cliché television shows, ignoring the abundance of high-quality programming.

“One thing I’ve learned,” says Minicucci, “is that it doesn’t matter what the show is, if it’s funny or dramatic, if it’s received tons of Emmys or no love whatsoever—if there are people out there who really look forward to it being on, like it was written for them, that’s an art. That’s the key to the art, in some sense.” ■



Dianne Messina Stanley has written or produced more than 300 hours of prime-time television. She says she lucked into her career, and now she wants to share the tools of her trade with U of I students in hopes that they will consider a career writing for the small and large screen.

*Friday Night Lights*—the dramas they selected—and write an episode for one and comment on the work of their peers for both.

At first, TV writing feels mechanical, says Stanley: 52 to 60 pages for a one-hour show; two to three subplots; 30 to 35 scenes; and a dramatic arc before each commercial break.

But it’s not all that different, notes one student, from the constraints of poetry. Matthew Minicucci, a poet who completed his MFA in April, compared it to writing a villanelle, or a sonnet, “but a sonnet people watch on Saturday nights.”

Furthermore, the formal structure has the odd effect, at least in Stanley’s class, of enabling the students to feel less defensive if their ideas are shot down by the other writers. Suggesting that

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### National Leader

As Brazil emerges as one of the world's largest, most vibrant economies, University of Illinois is staging its own emergence—as

### Test Your U of IQ

The largest bell in the Altgeld Hall bell tower was dedicated to this former president of the University

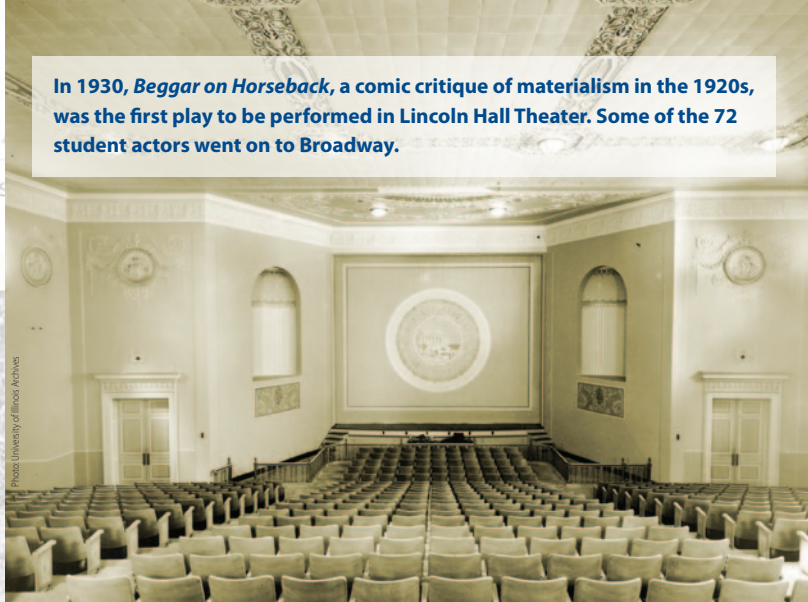


Photo: University of Illinois Archives

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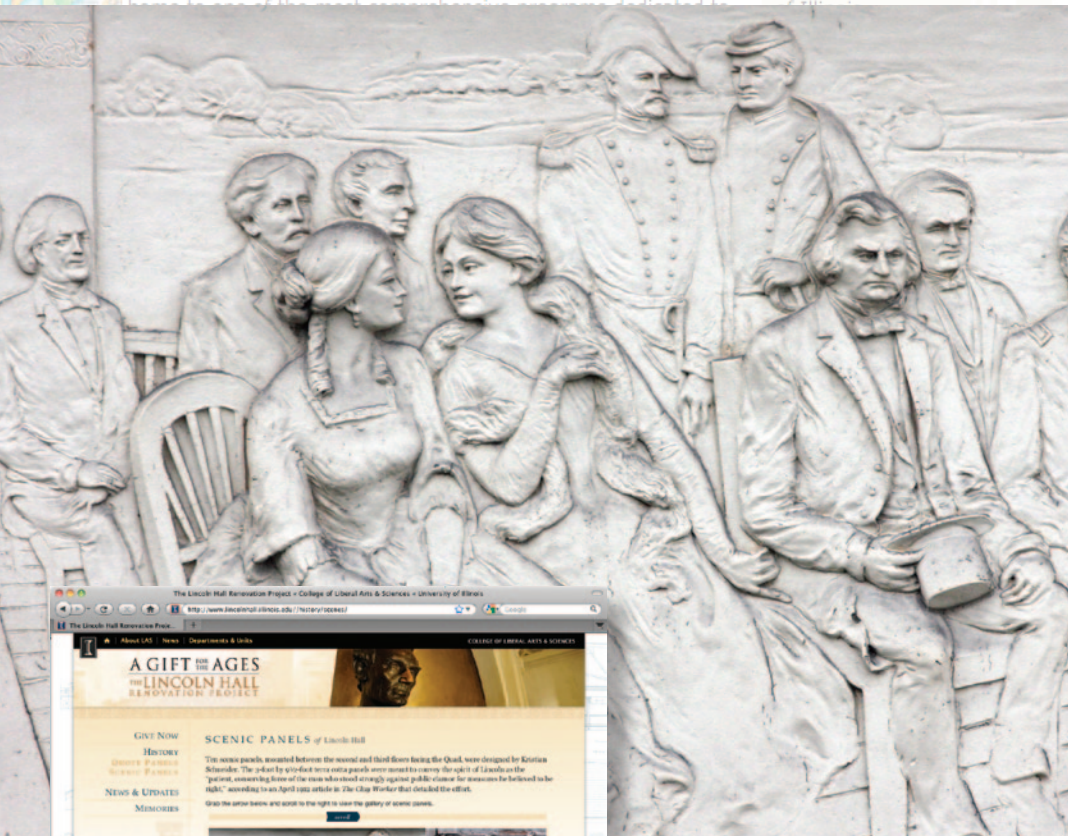
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### Send Us Your Class Notes

For many years, the Class Notes section of LAS News has been a place for alumni to re-connect 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. [las.illinois.edu/alumni/magazine/classnotes](http://las.illinois.edu/alumni/magazine/classnotes)

facebook [facebook.com/las.illinois](https://facebook.com/las.illinois)



## ONLINE GALLERY: Lincoln Hall's Terra Cotta Panels

See the 30 historical quote and scenic panels adorning Lincoln Hall in this online exhibit. Created to commemorate key people and events in the life of Lincoln, the panels will be restored during the building's renovation.

[lincolnhall.illinois.edu/history/scenes](http://lincolnhall.illinois.edu/history/scenes)



## MARK YOUR CALENDAR



### “ROCK” IN WRIGLEYVILLE

**Friday, June 25, 2010**  
**Rockit Bar & Grill**  
**at Wrigleyville**  
**Chicago, IL**  
**7:00-9:00 p.m.**

Chicagoans, here's your chance to check out the newest Rockit Bar & Grill location. Combining a historic location across the street from Wrigley Field, award-winning food, and great music, it's a prime place to catch up with College of Liberal Arts & Sciences alumni and friends. Sample a variety of Rockit's signature appetizers while you mingle on the private upper deck. Cash bar will be available. Guests must be 21 years or older to be admitted.

Billy Dec, CEO & founder of Rockit Ranch Productions and LAS alumnus, is sweetening the deal by offering \$10 gift cards to the first 125 guests to register!

**Registration Fee: \$20 per person    Deadline: Friday, June 11, 2010**

### AN EVENING TO REMEMBER CHICAGO SYMPHONY TRIBUTE TO BERNSTEIN & COPLAND

SUNDAY, JULY 11, 2010    RAVINIA FESTIVAL    HIGHLAND PARK, IL    3:00-7:00 P.M.



Treat yourself to a summer's evening of great dining and music. The LAS Alumni Association invites you to a private luncheon, catered by the legendary Levy Restaurants, followed by the Chicago Symphony Orchestra's tribute to musical legends Leonard Bernstein and Aaron Copland. Your tickets will include pavilion seating for the concert.

Luncheon features a buffet of fresh salads, gourmet sandwiches, and house-baked desserts along with complimentary beer, wine, and soft drinks—all served under one of Ravinia's elegant tents.

**Registration Fee (luncheon and concert): \$50**  
**Deadline for Registration: Friday, June 4, 2010**

This event is partially funded by a generous gift from the late Katherine Wolcott Walker, former LAS Alumni Association Board President and 1997 Distinguished Service Award honoree.

### CARDINALS VS. CUBS

**Sunday, August 15, 2010**  
**Busch Stadium**  
**St. Louis, MO**  
**11:15 a.m.**

Watch these rivals play ball from the Redbird Row party rooms overlooking right field! University of Illinois head baseball coach Dan Hartleb will “warm up the bullpen” with a talk and discussion on “The Landscape of College and Professional Baseball: Why Academics Are So Important.”

Then dig into an all-you-can-eat ballpark-style luncheon buffet. Soda, beer, and snacks will be served.

**Registration Fee: \$95**  
**Deadline for Registration: Friday, July 30, 2010**

