UI professor: NCAA seedings don’t matter in predicting winners after Sweet Sixteen

By Phil Ciclora
News Editor

For budding “bracketologists” busy weighing picks for their annual March Madness office pool, a UI professor has some advice on how to pick winners: In the later rounds of the tournament, ignore a team’s seeding, which is a statistically insignificant predictor of a team’s chances of winning.

According to Sheldon H. Jacobson, a professor of computer science and the director of the simulation and optimization laboratory at Illinois, for the top three seeds in the four regional brackets, the road to the Final Four of the NCAA men’s Division I basketball championship will most likely play out according to their initial seeding in the first three rounds of the tournament – that is, the higher-seeded teams will most likely beat their lower-seeded opponents. But once the field has been winnowed to the so-called “Elite Eight” teams, Jacobson says each team’s odds of winning are statistically no different than a coin flip, no matter how high or low the teams were initially ranked at the start of the tournament.

“‘The deeper you get into the tournament,’ Jacobson said, ‘the less effective seeding is in predicting winners.’”

Jacobson said that for the 12 teams that comprise the top three seeds in each of the four regional brackets, seeding is an “excellent predictor” of the outcomes of the first three rounds of games with those teams. “In the first round, the No. 1 seed has beaten the No. 16 seed 100 percent of the time,” Jacobson said.

“But after the Sweet Sixteen, it is a statistical toss-up as to who wins the remaining games. A team’s seeding can be thrown out the window. They really don’t give you a good indication of who is going to win the game.”

Jacobson, who, along with graduate student Douglas M. King, wrote an article titled “Seeding in the NCAA Men’s Basketball Tournament: When is a Higher Seed Better?” that will be published in a forthcoming issue of the Journal of Gambling Business and Economics, said the impetus of the study was not to predict brackets or winners in advance of the tournament, but to see if the top three teams’ seeding in each bracket is a good predictor of how far they will go in the “Big Dance.”

“I have always been surprised that the first seeds seem to do better than the second seeds, who seem to do better than the third seeds,” Jacobson said, “because you would think that there is not really a big difference between the top three seeds from each of the four regions.”

So there is a statistically significant difference between what are ostensibly the top 12 teams in the country.”

“The answer is both ‘yes’ and ‘no,’” Jacobson said. “There are differences, but it is not a question as to whether they are different; it is a question as to when they are different, based on the rounds of the tournament. Seeds are important, but they start to lose their strength beginning in the Sweet Sixteen round. By the time they reach the Elite Eight, those teams were not statistically different than anyone else in the field.”

Jacobson said that tournament seedings, which are determined by a 10-member committee of NCAA basketball athletic directors and conference commissioners from across the country, are an easy, Six NCAA SEEDING, Page 4

UI finance expert

Markets still a good litmus test for the economy

By Jan Dennis
Business & Law Editor

Don’t put much stock in rumblings that financial markets are a faulty barometer of the nation’s economic climate, a UI business expert says.

While day-to-day ups and downs can be misleading, finance professor David Ikenberry says broader stock market trends are a good indicator of how the economy is faring and whether it’s on the rise or sputtering.

“Markets are made up of a lot of people with a strong motivation to discern the truth because it’s in their own best interest financially,” he said. “To ignore that dynamic, you’re turning your back on a valuable tool in terms of gauging economic health.”

Questions about whether markets accurately reflect the economy have surfaced as stock indexes continue to slide despite massive government initiatives to stem the deepest economic downturn since the Great Depression.

Ikenberry conceded that one-day swings are sometimes deceptive, rooted in STOCK MARKET, PAGE 3

In this issue

Extraordinary service

Three Illinois scientists will be honored with the UI Board of Trustees’ highest award, the Distinguished Service Medalion.

New pathway

A new study by UI researchers could have important implications for the treatment of diseases or conditions linked to chronic inflammation.

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On the Web www.news.illinois.edu/ii
Provost announces changes to promotion, tenure criteria

By Sharia Forrest
Assistant Editor

ew criteria for promotion and ten- ure will take effect with the fiscal year 2009 budget, as de- tailed in Provost’s Communication No. 9, which is posted on Provost Linda Katehi’s Web site and recently was revised by the Provost’s Appointments and Nomin- ation Committee after an extensive cross- campus review process.

Dr. Linda Katehi’s office said that the changes were made to ensure that the promotion and tenure process for our faculty was as transparent as possible and that our evaluation criteria for the contributions of our faculty were re- sponsive to the emerging interdisciplinary and translational nature of scholarly activi- ties – both in and outside of the campus and even college boundaries.

Guidelines also were inserted for solic- itation of internal letters to evaluate a can- didate’s interdisciplinary or translational research.

Evaluators are asked not only to assess the quality of the scholarly activity itself, but to evaluate its underlying themes and broader impact. Cangellaris said, “Public engagement is an important com- ponent of our university’s mission. There- fore, for all members of the university, the activity needs to be properly documented and evaluated for promotion and tenure.”

Another significant change in Communi- cation 9 is the redefinition of the word “research” to encompass creative arts and research that is interdisciplinary and/or translational.

The changes in Communication 23 were motivated by the desire to establish mean- ingful guidelines for the hiring and mentor- ing of faculty members in the ever more inter- disciplinary research that crosses depart- mental and even college boundaries.

A key change to Communication 9 is that it is now clear that the word “research” is being used in a very broad sense.

“Public engagement is an essential com- ponent of our university’s mission. Therefore, all members of our university, the activity needs to be properly documented and evaluated for promotion and tenure,” he said.

President B. Joseph White agreed to amend the provost’s Communications – Communi- cation 9, Promotion and Tenure; Communi- cation 10, Allocation of Research Funds; Notice of Non-reapportionment for Non-ten-ured Faculty Members, which addresses the appeals process; Communication 23, Evalu- ation of Assistant Professor, and Review of Faculty Members with Budgeted Joint Appointments.

Parkinson’s Foundation
Robert L. Smith, 82, died March 7 at Carle Foundation Hospital, Urbana. Smith was a professor of lighting and illumination in the department of architecture. Memorials: Alumni: American Museum, The Heritage Center of Champaign County, Post office

Andreas Cangellaris

John F. Bauerle, 81, died March 9 at Heartland Health Care Center, Champaign. He was an instrument maker in the geology department for 32 years, retiring in 1983. Memorials: Illinois Memorial Hospital, Urbana.

Jean Gilbert Wilson, 77, died March 11 in Carle Delmar Nursing West Nursing Home, Champaign. Wilson was a nurse for 14 years, retiring in 1979. Memorials: Iroquois Memorial Hospital Program.


Mary E. Patterson, 83, died March 12 at The Carle Arbours, Savoy. Miller worked as an accounting clerk III in the College of Business for nearly 18 years, re- tiring in 1984. Memorials: Department of Natural Resources, One Natural Resources Way, Springfield, IL 62702-1271 or the Champaign County Historical Muse- num, 102 East University Ave., Champaign, IL 61820.

Doris Jean Patterson, 82, died March 11 at Champaign County Nursing Home, Urbana. Patterson was a clerk II with Admissions and Records for about 35 years. Memorials: Alzheimer’s Association, Champaign County.

Cecil A. Redding, 85, died March 5 at the Delmar Gardens West Nursing Home, St. Louis. Redding worked as a mealantor for Housing from 1949 until 1966. Memorials: Illinois Memorial Hospital Program.

Cecil A. Redding,

Robert L. Smith,

John F. Bauerle,

Katherine W. Legg,

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Memorials: Iroquois Memorial Hospital Program.

Katherine W. Legg, 74, died March 13 at Provena Covenant Medical Center, Urbana. Canavan worked at the UI as an adminis- trative aide for 14 years in the College of Engineering, retiring in 1991.


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On the Job Sue Wilson

Sue Wilson, an office support associate in the Housing Division, has worked at the UI for more than 20 years. Wilson’s mother worked in the psychology department for several years and told her that it was a great place to work. Wilson decided to see if her mother was right and began working at the UI College of Nursing in 1988. After eight years, she moved to her current position with Residential Life and has been there for the last 12 years.

Wilson graduated from Urbana High School in 1977 and studied journalism at Eastern Illinois University. Wilson and her husband, Jack, live in Champaign with a dog and several cats.

Tell me about your job.

I am Bo Wilson’s secretary and the first person you see when you come into Residential Life. I compile daily reports from resident directors of situations that occur in the residence halls – everything from alcohol transports, noise violations, roommate conflicts or copyright infringement. Depending on the violation, it is my job to correspond with the students involved. I also compile lists and statistics of incidents that are used internally. I organize a lot of data on fire alarms, transports and other residence-involved situations into various databases. We keep a running report of these incidents and it is compiled at the end of every semester. We like to have a lot of information at our fingertips to stay on top of things.

What does a typical day look like?

My day really depends on what incidents happened in the residence halls the night before. I don’t really have a set routine, because every day is different. I spend a good amount of time corresponding with students and entering data, but sometimes I will order supplies for the office. It really is a mishmash of stuff, but I like coming to work knowing that it won’t be the same as the day before.

What do you like most about your job?

I like how my work is largely student-based. It is interesting because of the different situations that arise in the residence halls. I learn a lot about students. I also spend a lot of time working with the resident directors and area coordinators within Housing, and they are great people to work with. We’re like one big family. There are no egos, which is really good when you work in an office. We tend to stick around for a long time and get attached to each other.

What do you like least about your job?

I spend a lot of time off the job working with a non-profit organization called CAFOsNAP. We’re a group of volunteers who are concerned for the welfare of cats and other small animals. We trap stray cats and spay or neuter them as well as provide medical care, all at our own expense. We work with the community to also provide low-cost spay and neuter services to help with overpopulation of stray animals. We have a small, no-kill adoption program but have no facility, so our cats are either at the Champaign PetSmart or in foster care. Our volunteers do a wide range of activities – fostering, trapping or spending time with our cats, and we are always looking for more help. There are currently 30 cats available in our adoption program, and last year we helped about 200 cats, plus a dog or two, find their forever home.

How did you get involved with CAFOsNAP?

I got involved because I wanted to do adoption counseling at PetSmart, but then I heard about this program and started fostering cats. I’ve been involved about 4 1/2 years now.

The most rewarding part of this is knowing that we are not only helping cats but the community as well. I really can’t imagine my life without being involved in adoption counseling and helping the community. I love it.

What do you with the cats that you foster?

I actually have a designated room in my house for the cats that I foster. It has two cat condos, carpeted ledges at various heights on the walls and a floor-to-ceiling cat pole. It also has a pink playpen to contain kittens that are using the litter box. It has a window, and I think the cats really enjoy that. I actually have a designated room in my house for the cats that I foster.

Tell me about your house.

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Extra medicare charges for the rich a slippery slope

By Jan Dennis
Business & Law Editor

A growing trend toward higher Medicare premiums for the rich- est Americans could ultimately creep into the retirement income of less-wealthy seniors, a UI expert on federal health insurance warns.

Law professor Richard L. Kaplan says President Obama’s bid to charge well-to-do retirees more for prescription-drug benefits is just the latest in a nearly two-decade shift that has saddled wealthy seniors with a rising share of Medicare premiums.

Only the top 6 percent of Medicare enrollees would pay more under Obama’s proposal for Plan D prescription coverage, mirroring a change enacted in 2003 for doctor’s visits, diagnostic tests and other medical services covered under Plan B. But the president’s plan could lock in earnings caps rather than adjusting for inflation, which would slowly expand the pool of retirees required to pay, said Kaplan, who wrote a 2006 article examining the impact of means testing under Plan B.

“History offers an example of that with Social Security,” he said. “When taxes were imposed 25 years ago on benefits for recipients with income over $25,000, it affected only the top 10 percent. But it was never adjusted for inflation, so now nearly 40 percent are affected.”

Kaplan says Congress also has a host of other options to expand the program now that Plan B income limits have pushed the notion of extra Medicare charges over its biggest hurdles — getting the politically sensitive concept enacted and setting up an institutional framework to administer it.

Among other things, he says the inflation adjustment could be stripped from Plan B, or Congress could lower income thresholds that now stand at $85,000 a year for individuals and $170,000 for married couples.

“I think people’s biggest fear is that means testing is already in place, so it doesn’t take much effort for Congress to dial down those numbers and hit more people,” Kaplan said.

Kaplan called the plan “an upper-income irritant more than a major revenue producer,” saying the money pales in the scope of a roughly $440 billion Medicare program.

“I think the additional revenue is hardly worth the hassle,” Kaplan said. “It destroys the concept of social insurance — that Medicare is an entitlement for everyone who reaches a certain age and has worked a certain amount of time. But when President Clinton had Congress lift the Medicare pay-roll-tax cap in 1993, Part A (hospital coverage) began to be calibrated according to income, and the notion of social solidarity in Medicare was eroded.”

He says Congress will likely approve something that college basketball fans probably already knew in their gut — that a team’s seeding provides some indication as to how well it is going to do, but it does not give you the definitive predictor,” Jacobson said.

“There are always upsets, there are always Cinderellas who make the Sweet Sixteen, but the rankings begin to fall apart soon thereafter. “In the Sweet Sixteen round, the rankings still hold, but just barely,” he said. “From the Elite Eight on, the rankings begin to fall apart.”

For the average college basketball fan looking for an edge in their bracket predictions, Jacobson advises picking the higher seed, saying, “I think people’s biggest fear is that means testing is already in place, so it doesn’t take much effort for Congress to dial down those numbers and hit more people.”

Kaplan said. “It destroys the concept of social insurance — that Medicare is an entitlement for everyone who reaches a certain age and has worked a certain amount of time. But when President Clinton had Congress lift the Medicare pay-roll-tax cap in 1993, Part A (hospital coverage) began to be calibrated according to income, and the notion of social solidarity in Medicare was eroded.”

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There are always upsets, there are always Cinderellas who make the Sweet Sixteen, the Elite Eight and even the Final Four, like George Mason did a few years ago.”

For the average college basketball fan looking for an edge in their bracket predictions, Jacobson advises picking the higher seeds to beat their lower-seeded opponents in the first two rounds, but warned that the seed rankings begin to fall apart soon thereafter. “In the Sweet Sixteen round, the rankings still hold, but just barely,” he said. “From the Elite Eight on, the rankings begin to fall apart. Jacobson said that other intangible factors besides a team’s initial seeding, such as player match-ups, a team’s style of play and its relative “hotness” or “coldness” prior to the game, have a greater effect on the outcome of contests in the later rounds of the tournament. Especially when you get into the Elite Eight,” Jacobson said, “that is when you are going to see teams you do not expect to win, ending up winning games at a higher statistical rate than would be expected.”

Despite its weakness as a predictive model, the seed-based ranking system used by the NCAA doesn’t need to be replaced wholesale, Jacobson said. “The committee has a very challenging job seeding the teams, and the tournament format by design is exciting,” he said. “But the fact is that you are seeing something that college basketball fans probably already knew in their gut — that a team’s seeding provides some indication as to how well it is going to do, but it does not give you the definitive predictor,” Jacobson said.

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Three chosen to receive Distinguished Service Medallion

The UI Board of Trustees presented its highest honor, the Distinguished Service Medal, March 11 to three scientists from the Urbana campus: Sir Anthony J. Leggett, the John D. and Catherine T. MacArthur Professor and Center for Advanced Study Professor of Physics; Carl R. Woese, the Stanley O. Ikenberry Endowed Chair and Center for Advanced Study Professor of Microbiology; and the late Paul C. Lauterbur, the Center for Advanced Study Professor of Chemistry, Biophysics and Computational Biology and Biengineering and Distinguished University Professor of Medical Information Sciences.

The award was created to recognize individuals whose contributions to the growth and development of the UI, through extraordinary service or benefaction, has been of unusual significance.

Board chair Nirajan Shah said that the three recipients were richly deserving of the award. “These three legendary faculty members have garnered many national and international honors for their research,” Shah said. “It is fitting that we add our institutional laurels signifying the university’s appreciation and profound respect for their monumental scientific advances.”

Leggett was awarded the 2003 Nobel Prize with two other scientists for their work in superconductivity and superfluidity that advanced the field of quantum mechanics and the understanding of subatomic structures.

Leggett, who joined the UI faculty in 1983, is a member of the Royal Society of the United Kingdom, the American Physical Society, the American Institute of Physics and an honorary fellow of the Institute of Physics (U.K.).

He was knighted by Queen Elizabeth II in 2004 “for services to physics.”

As a native of London, Leggett earned his doctorate in physics from Oxford University. He attributes his success to his research associate from 1964-5 and again in 1967, before returning to the UI faculty in 1983. Woese, a faculty member since 1964, describes himself as a molecular biologist turned evolutionist. He received the 2003 Crafoord Prize in Biosciences from the Royal Swedish Academy of Science in 1993. He is a member of the domain of life known as Archaea.

The Crafoord Prize is presented by the Royal Swedish Academy of Sciences in recognition of accomplishments in scientific fields not covered by the Nobel Prize, which the academy also selects.

Woese earned his bachelor’s degree in math and physics from Amherst College and a doctorate in biophysics from Yale University.

Lauterbur and a British scientist shared the 2003 Nobel Prize for Physiology or Medicine for “seminal discoveries concerning the use of magnetic resonance to visualize different structures.”

The pioneering work resulted in the development of magnetic resonance imaging. Lauterbur, who joined the UI College of Medicine in 1965, received the Albert Lasker Clinical Research Award in 1984, the National Medal of Science in 1987, the National Medal Technology in 1988, the Kyoto Prize from the Inamori Foundation (Japan) and the National Academy of Sciences Award for Chemistry in Service to Society in 2001. Lauterbur was a member of the National Inventors Hall of Fame. Lauterbur received his bachelor’s degree in chemistry from the Case Institute of Technology in Cleveland and his doctorate from the University of Pittsburgh. He died in 2007.

“Professors Leggett and Woese did groundbreaking scientific research that advanced our fundamental understanding of the natural world,” said Chancellor B. Joseph Espenshade. “The late professor Lauterbur invented one of the great life-saving medical devices of the 20th century. Advancing scientific understanding and improving human health are two things that great public universities do well, nowhere better than at the UI.”

“IT is highly fitting that the UI Board of Trustees is bestowing its highest honor on professors Leggett and Woese and the late professor Lauterbur so that the whole UI family can express its pride and gratitude to these exemplary faculty members, researchers, colleagues and teachers,” said President B. Joseph White. The medallions will be presented at a future date.
A Minute With ...™
Economist Daniel McMillen on the U.S. housing market

Years of soaring house prices have given way to a double-digit turndown since 2006, with no end in sight. Housing expert Daniel McMillen, an economist with the Institute of Government and Public Affairs at the UI, discusses the slumping market and when it might rebound. He was interviewed by News Bureau Business & Law Editor Jan Dennis.

Has the nation’s housing market hit bottom or could values continue to decline?
I don’t think the housing market will bottom out until after the economy starts to recover. Until then, I think home prices will keep dropping, but how much is anyone’s guess.

Prices have fallen 11.6 percent since a year ago, and 17.5 percent since the market peak in 2006. One in every five homes sold over the last year was in foreclosure, and an estimated one in six homeowners have negative equity – meaning they owe more on their mortgage than their house is worth.

That’s why I don’t see this changing very quickly. We have a huge inventory of unsold houses and a lot of people with negative equity, so the economy is going to have to recover quite a bit before the housing market really starts to rebound.

It could be more than a year before the economy turns around. This is a recession triggered by a panic in the financial markets, and previous experience with panic in financial markets has been fairly narrow, like Japan’s problems in the 1990s.

Eventually confidence will be restored and things will start to rebound. But it’s not going to be a quick process.

Do you think government efforts to prop up the housing market will help?
Some will and some won’t. One that I think will have much effect is the bigger tax credit for first-time home buyers. We had credits before, and while they’re a little bigger now, a few hundred dollars isn’t going to make much difference to most people.

One that I think is pretty significant is pumping as much as $200 billion into Fun- nie Mae and Freddie Mac, allowing people to renegotiate their mortgage at current rates instead of having to lose their home. That should ward off a lot of foreclosures, which results in the effects of prior administration of Vitamin E to the test in mice. The team included with no end in sight. Housing expert Daniel McMillen, an economist with the Institute of Government and Public Affairs at the UI, discusses the slumping market and when it might rebound. He was interviewed by News Bureau Business & Law Editor Jan Dennis.

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It could be more than a year before the economy turns around. This is a recession triggered by a panic in the financial markets, and previous experience with panic in financial markets has been fairly narrow, like Japan’s problems in the 1990s.

Eventually confidence will be restored and things will start to rebound. But it’s not going to be a quick process.

Do you think government efforts to prop up the housing market will help?
Some will and some won’t. One that I think will have much effect is the bigger tax credit for first-time home buyers. We had credits before, and while they’re a little bigger now, a few hundred dollars isn’t going to make much difference to most people.

One that I think is pretty significant is pumping as much as $200 billion into Fund- nian Mae and Freddie Mac, allowing people to renegotiate their mortgage at current rates instead of having to lose their home. That should ward off a lot of foreclosures, which results in the effects of prior administration of Vitamin E to the test in mice. The team included with no end in sight. Housing expert Daniel McMillen, an economist with the Institute of Government and Public Affairs at the UI, discusses the slumping market and when it might rebound. He was interviewed by News Bureau Business & Law Editor Jan Dennis.

Has the nation’s housing market hit bottom or could values continue to decline?
I don’t think the housing market will bottom out until after the economy starts to recover. Until then, I think home prices will keep dropping, but how much is anyone’s guess.

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Metabolic carbon nanotubes have been proposed as interconnects in future electronic devices packed with high-density nanoscale circuits. But can they stand up to the heat?

Recent experiments have shown the absence of the thermoelectric effect in metallic carbon nanotubes. Building upon earlier theoretical work, UI researchers say they can explain this peculiar behavior, and put it to good use.

“Our work shows that carbon nanotubes that come in metallic form have different thermal and electrical properties than normal conductors,” said Jean-Pierre Leburton, a professor of electrical and computer engineering in the department of crop sciences at Illinois and co-author of a paper published in the Dec. 19 issue of the journal Physical Review Letters, and in the Jan. 5 issue of the Virtual Journal of Nanoscale Science and Technology.

“Specifically, metallic carbon nanotubes don’t exhibit the thermoelectric effect, which is a fundamental property of conductors by which a current flows because of a temperature difference between two points of contact,” said Leburton, who is also affiliated with the Beckman Institute, the Micro and Nano Systems Laboratory, and the Frederick Seitz Materials Research Laboratory. “This is a metal, which doesn’t behave like an ordinary metal.”

In a normal conductor, a current can be induced by applying a potential difference (voltage) or by creating a temperature difference between two contacts. Electrons will flow from the higher voltage to the lower, and from the higher temperature to the lower. There is a similarity between temperature imbalance and voltage imbalance.

In metallic carbon nanotubes, however, the lack of the thermoelectric effect means no current will flow because of temperature change between two contacts. The similarity between temperature imbalance and voltage imbalance.

This is a fundamental property of metallic carbon nanotubes, Leburton said, peculiar to their particular structure. Semiconducting nanotubes, which possess a different chirality, behave differently.

Also, in normal conductors, electrons can acquire a range of velocities, with some traveling much faster than others. In metallic carbon nanotubes, however, all electrons travel at the same velocity, similar to the behavior of photons. Heating the nanotube does not change the electron velocity.

“This means metallic carbon nanotubes offer less resistance than other metal conductors,” Leburton said. “And, in high-density circuits, metallic carbon nanotube interconnects would reduce heat losses and require far less cooling than copper nanowires.”

With Leburton, physics graduate student Marcelo Kuroda is co-author of the paper. The current work is an extension of theoretical work Leburton, Kuroda and electrical and computer engineering professor Andreas Cangellaris first published in 2005.

Study of protein structures reveals evolutionary history

A new study of proteins, the molecular machines that drive all life, also sheds light on the history of living things.

The study, in the journal Structure, reveals that after eons of gradual evolution, proteins suddenly experienced a “big bang” of innovation. The active regions of many proteins, Leburton said, peculiar to their particular structure. Semiconducting nanotubes, which possess a different chirality, behave differently.

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“In the absence of the thermoelectric effect in metallic carbon nanotubes,” he cautions, “this means metallic carbon nanotubes offer less resistance than other metal conductors.”

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Unique properties

Leburton, left, a professor of electrical and computer engineering, and physics graduate student Marcelo Kuroda collaborated to explain the absence of the thermoelectric effect in metallic carbon nanotubes.

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**Scholar studying untold story of Irving Berlin’s theater work**

By Melissa Mitchell

Even if you’re too young to be able to match the songs of Irving Berlin with the composer, you likely can sing a few lines of “White Christmas” or hum the tune to “God Bless America.”

A conversation about Berlin is ... people know his name and the titles of half a dozen of his songs,” says UI musiologist Jeffrey Magee. “Berlin’s the kind of guy where you say, ‘Oh, he did that?’”

It’s hard not to have been touched by his music, Magee said, considering that Berlin — one of the few well-known popular composers who wrote both lyrics and music — was turning out the tunes for almost seven decades. Berlin wrote his first song in 1907 and continued to write lyrics until his death at age 101 in 1989.

Since 1925, Magee, said at least eight biographies have been published about the composer. None to date, however, has focused specifically and in depth on his body of work for the theater.

Magee, who chairs the UI School of Music’s musicology division, is researching and writing that story, which Oxford University Press is scheduled to publish in its Broadway Legacies book series in 2011. He is receiving support this year from a grant appointment as associate in the university’s Center for Advanced Study.

That’s entertainment 

Later this month, musicologist Jeffrey Magee will present a lecture-demonstration about Irving Berlin. Three singers and a pianist will join him.

Magee said his show — which will feature the vocal talent of undergraduate music majors Lingling Xiang, Illinois voice instructor Dawn Harris, and Illinois voice instructor Chris White — will be webcast on the Library of Congress site for a limited time following the live presentation at www.loc.gov.

The title of the presentation refers to the Berlin song “Now It Can Be Told,” the only new song Berlin wrote for the 1938 film “Now, Voyager.”

“That was the first of the anthology, or cascade, melodies in which he uses his past songs,” he said. The story is woven together and told through the incorporation of older compositions. The film “White Christmas” is perhaps the most famous example of this; the song was original written for an earlier film — “Holiday Inn.”

Berlin also is known for recycling particular melancholy musical phrases and song titles in the same song as original tunes, Magee said. For example, it’s easy to recognize a string of notes from the 1918 song “Oh, How I Hate to Get Up in the Morning” in the 1930s ballad “Change Partners,” sung by Astaire.

Magee said that — like the Berlin song — the new song Berlin wrote for the 1938 film “A Fine Romance” was important because it introduced a “transcription factor code” or “NF-kappa B.”

“Like the genetic code, which spells out the instructions for building a human body, NF-kappa B is the mechanism that instructs the immune system how the inflammatory response is going to go,” Magee said.

At the heart of the cell’s inflammatory response is a protein complex named NF-kappa B. Protein complexes are built from subunits that can bind to DNA and regulate the expression of particular genes.

The NF-kappa B protein complex consists of two subunits that can bind to DNA and regulate the expression of particular genes. The complex acts like a molecular switch that can be turned on when the cell is under attack and then off when the attack has been cleared. Upon activation, it rapidly moves into the nucleus and sets in motion an army of proteins that cause inflammation. Normally, a second protein inactivates NF-kappa B by directly binding to it. But when the cell is under stress (for example, during infection), this inhibitory protein is dismantled. NF-kappa B, now relieved of inhibition, rushes into the nucleus and activates gene expression. Once it finishes its job, NF-kappa B stimulates the production of the inhibitory partner and is itself inhibited again.

Recent studies found that NF-kappa B also was being degraded in the nucleus, indicating an alternate pathway by which NF-kappa B activity is regulated in the cell.

“Every step of NF-kappa B activation is tightly controlled,” Chen said. He and his colleagues have identified the signals that control its degradation and inactivation.

Chen’s earlier work gave him important clues about how this activity can be modified when small chemical groups are added to the protein after it is assembled. This process, called post-translational modification, tags the proteins. Like the sign on the front of a bus declaring its destination, the tags direct proteins to different fates.

“One of the things in our lab is to understand how post-translational modifications affect NF-kappa B activity under normal and diseased conditions,” Chen said.

To identify whether a particular molecular tag, called a methyl group, could be added to NF-kappa B to regulate its activity, Xiao-Dong Yang, a postdoctoral researcher in Chen’s lab and lead author on the new study, performed a simple experiment. He mixed the NF-kappa B protein with a protein whose function is to add a methyl group to certain other proteins. He discovered that a subunit of NF-kappa B was, in fact, being labeled with a methyl group.

“By adding a methyl group increases the weight of the protein by a very small amount. In experiments with the protein purification techniques,” Chen said.

In subsequent experiments, he found that the methylated NF-kappa B was degraded much faster than the non-methylated protein.

Chen said an understanding of the mechanism by which methyl groups can modify NF-kappa B could lead to the discovery of a “transcription factor code” or “NF-kappa B histone code.”

The code, he said, would spell out how various post-translational modifications signal different biological fates.

In some cancers and inflammatory diseases, Chen said, the methyl group can activate the NF-kappa B signaling pathway, leading to the development of new drugs to influence the methylation — and hence the activity — of this transcription factor and the inflammatory response.
ARChITECTURE, CONTinued FROM PAGE 1

were regarded simply as engines of a func-
tioning economy.

"Building was much more the result of
contemporary economic and political forces
than at any time before," Bognar said. "It
also much related to the GNP rooster as the
construction industry contributed around
18 percent to it at that time," he added, not-
ing that the rate has been falling since the
bubble burst.

During the earlier period, "there was the
belief that you have to rebuild – it’s not the
end product that’s important, but rather the
activity of building." Bognar said the practice of razing and building
drew slowly downward after the bubble
burst, but it continued in Japan to-

As anecdotal evidence that it hasn’t
disappeared completely, Bognar described
what happened when he took a group of UI
students to Japan last spring.

"According to my previous study, children who re-
homed for embracing so-called "green" build-
ing practices weren’t entirely driven by the
economy. Just as today’s U.S. inter-
est in green build-
ing is fueled by potential future monetary
and an interest in reducing carbon
emissions, Japan’s movement toward
increased sustain-
bility was com-
plicated and multi-
faceted. Again, cul-
tural issues played a

"There also is a continued movement
to discover the simple," he said.

"We are seeing a growing interest
in what I would call ‘earthly,’ or down-to-earth
architectures," he said.

"There are many practices that are
derivative of the philosophy ‘all
things must pass.’ " Even so, he noted, "no
building; it was already gone.”

Bognar noted that within the context of
traditional culture, architecture in Japan has
been long regarded as “part of the natural
forces,” meaning that the ritual rebuilding
of Shinto shrines and other edifices on a
regular basis reflected beliefs about the cy-
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"Modern-day architectural practices thus
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"Modern-day architectural practices thus
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that were derivative of the philosophy ‘all
tings that are partially, or when possible,
designed as ‘cultural buildings.’ And well-to-do
Japanese, exhibition galleries, restaurants. The
late 1980s-early 1990s also were the times when
architects as Tadao Ando, Fumihiko Maki,
Isisco Hasegawa, Toyo Ito and others
reached the epitome of their creativ-
ity and turned out numerous pieces of truly
world-class architecture. Perhaps not para-
doxically, this was also the ‘golden age of
Japanese architecture and design.’"

Another architectural trend in Japan dur-
ing the post-bubble years and one gaining
ground rapidly in the United States is a keen
interest in sustainability. In Japan, the
reasons for embracing so-called “green” build-
ing practices weren’t entirely driven by the
O

ARCHITECTURE

March 19, 2009

Social Work Editor

The study targeted children who received inpatient
psychiatric care, because it was an easily identifiable
marker of serious emotional and behavioral problems,
and it represented especially high levels of mental health care
needs. Five percent (296) of the children had at least
one episode of inpatient mental health care prior to
being placed in foster care.

"According to my previous study, children who re-
homed inpatient psychiatric care ended up in foster care
within two years of their first inpatient episode," Park
said.

"Children who receive inpatient psychiatric care have
a substantially greater risk for parent-child separa-
tion. Our current study shows that when those children
enter the child-welfare system, they are more likely
to suffer poor outcomes and be left behind in the sys-
tem."

The study indicated that children with inpatient psy-
chiatric episodes were at greater risk for frequent place-
ment disruptions and were less likely to reunite with their
families of origin or be adopted.

About half of the sample experienced more than
three placement changes during their first spell in fos-
ter care. Inpatient mental health episodes among white
children increased the likelihood of placement in-
stability for them by 75 percent, while such episodes
decreased the likelihood of permanence by 24 percent
among African-American children.

The study also suggested that there was limited ac-
cess to and underutilization of mental health services
among African-American children.

"Children with a history of inpatient mental health
treatment, especially when placed in foster care, benefit
from continued follow-up and referrals to community
mental health agencies to reduce placement disruptions
and facilitate timely permanence,” Park
said.

Foster-care placements come at considerable cost
to taxpayers: Placement in therapeutic foster care can cost
$30,000 or more annually, and placement in residential
psychiatric care considerably more.

"Early identification of service needs and related in-
terventions for children and youth with intensive men-
tal health needs can be cost-efficient by helping them
achieve placement stability and permanence,” Park
said.

During the observation period, about 70 percent of the
children in the study achieved permanency by re-
turning to their families or through adoption or guard-
ianship.

The study appears in the January 2009 issue of the
journal Research on Social Work Practice.

Following foster kids

Joseph P. Ryan, top, and
Jung Min Park, both professors
of social work, followed 5,978 children in foster care in Illinois for
several years to determine whether these children’s placement and
permanency outcomes were affected by their histories of
intensive mental health treatment.
**Illinois Domain Project**

Update e-mail return-address settings

It has been eight months since the illinois.edu e-mail domain was enabled. As of March 12, about 47 percent of all e-mail received on campus was sent to an illinois.edu e-mail address, while nearly 91 percent of all e-mail sent was from an illinois.edu e-mail address. These figures reflect unique efforts to inform and educate recipients about the new illinois.edu e-mail address and how to do this, please contact your department’s IT person, the CITES Help Desk (244-7000 or consult@illinois.edu), or follow instructions online at [http://engineering.illinois.edu/nae](http://engineering.illinois.edu/nae).

Questions about the Illinois Domain Project can be directed to illinoisdomainmainproject@illinois.edu.

**Prairie Fire**

First African-American town featured

The 2009 season premiere of WILL-TV’s “Prairie Fire,” to be broadcast at 7:30 p.m. March 26, tells the story of New Philadelphia, Ohio, the first U.S. town founded by a free African American. The show features UI archaeologists, who are uncovering the remains of this once racially integrated town 85 miles northwest of St. Louis, and looks at its founder, “Free” Frank McWorter.

Although the site was designated a National Historic Landmark in January, it’s still largely unknown to the public. “Prairie Fire.”

Series producer Steve Drake interviews two descendants of McWorter, siblings Gerald and Sandra McWorter, who talk about New Philadelphia’s role in the Underground Railroad and their pride in their great-grandfather.

He also talks to UI archaeologist Christopher Fennell, who is principal investigator at the dig near Barry, Ill.

In other stories in the first episode, viewers meet a photographer who is traveling across America documenting the many sculptures, monuments and other public artworks dedicated to Abraham Lincoln, including those located on the UI campus. The program also examines Lincoln’s evolving thoughts on slavery and colonization and how race played an increasingly important part in his political development.

In celebration of the 200th anniversary of Abraham Lincoln’s birth, every episode in the 2009 “Prairie Fire” season will include a feature story devoted to Lincoln’s life in Central Illinois. This companion series to WILL-TV’s Lincoln: Prelude to the Presidency, will explore Lincoln’s formative years riding the Eighth Judicial Circuit as a lawyer and how they shaped the man who became the 16th president. The Lincoln episodes were produced by Alison Davis Wood, who returns as “Prairie Fire” host this season.

For more information and to enter, visit [www.library.illinois.edu/ediblebooks](http://www.library.illinois.edu/ediblebooks).

**University Library**

**Edible Book Festival will be March 31**

Bibliophiles, book artists and food lovers will gather March 31 to celebrate the book arts and the (literal) ingestion of culture at the Fourth Annual Edible Book Festival.

The campus and local community are invited to experience this unique intersection of the book arts and cuisine, where participants create edible books that are exhibited, documented and then consumed. The public viewing begins at 11:30 a.m. at the University YMCA. An introduction and judges’ commentary follows at 12:15 p.m. with the eating of books scheduled for 12:45 p.m.

Edible art entries must have a connection to books as shapes or content. Prizes will be awarded on the basis of culinary merit. Last year’s entries included “The Pelican Brief,” “Lard of the Rings,” “Robinson Mousse-a,” “Peter Pancakes With Berries,” and “To Kill a (Tequila) Mockingbird.”

For more information and to enter, visit [www.library.illinois.edu/ediblebooks](http://www.library.illinois.edu/ediblebooks).

**UI performances now accessible through comprehensive Web center**

A ttention fans of UI music makers. Did you miss the “Beyond Cost” and “Raptitude” performances? Miles Davis “Roboplicity” at last year’s Allerton Music Barn Festival? What about the Opera Program’s production of “Cosi fan tutte” last spring at the Krannert Center for the Performing Arts? Wishing you could hear—and see—highlights of the Jerry Hadley Memorial Concert one more time?

Those performances—and many more by faculty members, students and guest artists of the UI School of Music—now are accessible online through the school’s new Media Center. A virtual trove of archival performances—some audio-only, some video—recently went live on the school’s Web site.

“This is a concerted effort—not a pun intended—to have these performances are accessible to the world,” said Karl Kramer, the school’s director.

In addition to past performances by faculty and guests artists, the site features concerts by university bands, orchestras and choirs, as well as opera productions. Also featured are selections from programs of annual events, including the Allerton Music Barn and Summer Jazz festivals.

Kramer said the site’s intended audience is broad and diverse.

“There’s a huge audience—from current university students, faculty and staff members to alumni, researchers, prospective faculty and the community.”

Kramer said he expects scholars may be drawn to the site “because as a school, we premiere new works and perform and archive more obscure pieces that are harder to track down.”

The site also includes a niche for showcasing faculty, alumni and student recordings. Kramer said visiting visitors to the site eventually will be able to click on the recordings to sample titles.

Another “coming soon” feature will be a section where visitors will be able to access publications by musicologists, musicologists, music educators and theory professors.

Kramer said that while other music schools archive certain elements of audio and/or video, most have “somewhat intermittent” less comprehensive content online.

“The feedback we’ve been getting from peers at Yale, Eastman and USC is phenomenal,” he said. Kramer added that when he presented the site to deans of some of the nation’s premier music schools at a recent meeting of The Seven Springs Group, “their jaws hit the floor.”

On the Web: [www.music.uiuc.edu](http://www.music.uiuc.edu)

**College of Engineering**

NAE regional meeting is April 2

“Engineering for Sustainable Global Water Resources” is the theme of the National Academy of Engineering regional meeting, hosted by the College of Engineering on April 2. The half-day event will be at the Beckman Institute.

The theme of the meeting reflects a key element of the academy’s “Grand Challenges for Engineering,” which is to provide perspectives on the looming global crisis of the 21st century, the availability, distribution and quality of water. Engineering at Illinois is home to several highly ranked departments and laboratories actively researching water-quality and infrastructure issues, and serves as the headquarters of the Center of Advanced Materials for the Purification of Water With Systems, a National Science Foundation Science and Technology Center.

The event is free and open to the public; registration is required. For further information and registration visit [http://engineering.illinois.edu/nae](http://engineering.illinois.edu/nae).

“Michael Ewald: A Remembrance” Memorial concert is March 20

School of Music faculty members and students will celebrate the life of the late trumpet professor Michael Ewald at a memorial concert beginning at 7:30 p.m. March 20 at Site BRIEFS, Page 11.
March 19, 2009

**BRIEFS, CONTINUED FROM PAGE 10**

Foellinger Great Hall at the Krannert Center for Performing Arts, the University of Illinois library "E-Villages" on April 8-10, is expected to attract several hundred students from various colleges, according to the library.

The conference will be held in the library, and will include sessions on the latest research in the field of library science.

**The Global Consumer in a Postmodern World**

Consumer behavior is panel focus

Consumer behavior in an increasingly buyer-oriented world will be the focus of a three-day conference that will bring an international panel of experts to the UI next month.

"The Global Consumer in a Postmodern World" will examine the growing importance of consumption in people's lives, and how the rise of consumer entitlement is influencing the global marketplace.

"We're looking at the lows and highs of consumption around the world, from poverty to luxury goods," said UI marketing professor Cele Otnes, who organized the conference.

"How do consumers cope with different socioeconomic and cultural conditions and how does that affect the way they participate in the marketplace?"

The conference will take place April 23-25 at the UI. Registration is available online at www.business.uiuc.edu/globalconsumer.

Sponsors are the Office of International Programs and Studies, Center for International Business Education & Research, and the Illinois Business Instructional Facility. Registration is available online at www.business.uiuc.edu/globalconsumer.

"The Global Consumer in a Postmodern World" conference at the UI will bring together scholars from various disciplines and the news media to stimulate dialogue and share research on climate change and on humans' ever-changing relationship to climate. Current reporting on climate change is overwhelmingly driven by scientific projections and policy debates over industry regulation.

"Planet U: The Human Story of Climate Change," to take place April 8-10, is expected to attract speakers from the sciences, humanities and the news media to encourage more effective communication among the academy, the media and the general public. The conference will emphasize the human story of climate change from the volcanic catastrophes of pre-history, to the rise and decline of civilizations, to our own intensifying sense of vulnerability on a warming planet.

Among the speakers will be Brian Fagan, a professor emeritus of anthropology at the University of California at Santa Barbara, the author of four books on ancient climate change and human society; Michael Hawthorne, William and Flora Hewlett Foundation.

Consumer behavior experts scheduled to speak at the conference:

- Eric J. Arnould, an anthropologist and professor of sustainable business practices at the University of Wisconsin, who studies consumer culture theory.
- Soren Askgaard, co-author of Europe's leading consumer behavior textbook and a professor of marketing and management at the University of South Denmark.
- Eileen Fischer, a marketing professor at York University in Canada who has written extensively for entrepreneurs and consumer journalists.
- Annamma Joy, a marketing professor at the University of British Columbia whose research includes ethnicity and marketing, and gender and consumption.

**On the Web:**

[http://provost.uiuc.edu/stewardingourresources/](http://provost.uiuc.edu/stewardingourresources/)

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- Eric J. Arnould, an anthropologist and professor of sustainable business practices at the University of Wisconsin, who studies consumer culture theory.
- Soren Askgaard, co-author of Europe's leading consumer behavior textbook and a professor of marketing and management at the University of South Denmark.
- Eileen Fischer, a marketing professor at York University in Canada who has written extensively for entrepreneurs and consumer journalists.
- Annamma Joy, a marketing professor at the University of British Columbia whose research includes ethnicity and marketing, and gender and consumption.

**A new web site created by the Office of the Provost offers the latest news about the UI’s budget and provides opportunities for members of the campus community to share their ideas, suggestions and possible solutions for helping the campus address its financial and educational challenges during the months ahead.**

The Stewarding Our Resources Web site is intended to be a reference and a venue for input and collaboration. Chancellor Richard Herman and Provost Linda Katehi wrote in their welcome letter posted on the site, "No matter where you are within the organization, you can participate in the decision-making process," they wrote. "We must bring together our collective knowledge of the campus so that we can find ways to move forward in these difficult times and become stronger and more productive as a result."

The site includes a virtual suggestion box called "Illinois Ideas." Members of the campus community are encouraged to share their views and their ideas for helping the campus use all its resources in the most economical and efficient ways. Suggestions will be addressed in the Frequently Asked Questions segment of the site, which will be updated regularly. The FAQ section addresses many of the suggestions and concerns that people have raised through the virtual suggestion box and at the Jan. 22 town hall meeting at Foellinger Auditorium, such as reporting waste, potential personnel actions such as layoffs and furloughs, flexible and four-day work schedules, and why the university can't simply reallocate its funds.

Since the Web site was activated, people have submitted 150 suggestions through the Illinois Ideas suggestion box.

The site also contains information about four key initiatives — IT@Illinois, service centers, process improvement and energy conservation — that are under way and are aimed at better stewardship of resources.

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**Web site offers budget news, sharing of ideas**

A conference at the UI will bring together scholars from various disciplines and the news media to stimulate dialogue and share research on climate change and on humans' ever-changing relationship to climate. Current reporting on climate change is overwhelmingly driven by scientific projections and policy debates over industry regulation.

"Planet U: The Human Story of Climate Change," to take place April 8-10, is expected to attract speakers from the sciences, humanities and the news media to encourage more effective communication among the academy, the media and the general public. The conference will emphasize the human story of climate change from the volcanic catastrophes of pre-history, to the rise and decline of civilizations, to our own intensifying sense of vulnerability on a warming planet.

Among the speakers will be Brian Fagan, a professor emeritus of anthropology at the University of California at Santa Barbara, the author of four books on ancient climate change and human society; Michael Hawthorne, William and Flora Hewlett Foundation.

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**On the Web:**

[http://provost.uiuc.edu/stewardingourresources/](http://provost.uiuc.edu/stewardingourresources/)

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[http://provost.uiuc.edu/stewardingourresources/](http://provost.uiuc.edu/stewardingourresources/)
F

A report on honors, awards, appointments and other outstanding achievements of faculty and staff members

engineering

Angela Green, a professor of agricultural and biological engineering, and graduate student Anthony Rund are among the 2009 New Faces of Engineering selected by the American Society of Agricultural and Biological Engineers.

Green and Rund are among 10 society members, 30 years old or younger, who have distinguished themselves through out-standing achievements that serve as inspiration to their peers and to future engineers.

Green’s achievements in biological and agricultural engineering include systems and facilities designs, innovative research into quantifying animal behavior, and advising students as part of research experiences.

Rund earned a bachelor’s degree in agricultural and biological engineering from the UI and is working toward a master’s of business administration.

Mathematics

Harry Triandis, a professor emeritus of psychology, has won the Eminent Scholar Award in International Management from the Academy of Management. He will give a talk and receive the award at the Academy of Management conference on Aug. 11 in Chicago.

According to the academy’s Web site, the award is “aimed at recognizing a body of scholarship that has profound impact on international management and business scholarship, research and practice. The recipient is meant to embody a mixture of new thought and effective communication into the community.”

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March 19, 2009

**Notes:**
- $ indicates Admission Charge
- More information is available from Marty Yeakel at 333-1085.

**March 20, 2009**

**Thursdays**
- **1:30** Noon. Latzer Hall, University. Noon. Center for Advanced Study. Center for Advanced Study.
- **2** Noon. IGB Conference Center. Martin Burke, UI. “Synthesis-enabled Studies.”
- **19** Thursday. Noon. B102 Chemical and Life Sciences Laboratory. Robb Fraley, Monsanto Co. 4 p.m. B102 Chemical and Life Sciences Laboratory. “Agricultural Biotechnology: Pathways for Delivering Better Food and More Fuel.” Robb Fraley, Monsanto Co. 4 p.m. B102 Chemical and Life Sciences Laboratory. “A Double-edged Sword: Metabolites in the Biology of Bacterial Pathogens.”
- **2** Thursday. 7:30 p.m. Studio Theater, Krannert Center.Brant Pope, guest director. 7:30 p.m. Studio Theater, Krannert Center. “Three Sisters.”

**Fridays**
- **20** Friday. 7:30 p.m. University of California, Davis. Noon. 2506 Life Sciences Auditorium. Xu, University of Wisconsin. Noon. B102 Chemical and Life Sciences Laboratory. Mourad Sefrioui, Stanford University. 4 p.m. 1404 Siebel Center. Computer Science.

**Sundays**
- **3** Noon. Center for Advanced Study. Center for Advanced Study.
- **3** Thursday. Noon. Center for Advanced Study. Center for Advanced Study.

**Monday, March 23, 2009**

**Thursdays**
- **2** Thursday. Noon. IGB Conference Center. Martin Burke, UI. “Synthesis-enabled Studies.”
- **19** Thursday. Noon. B102 Chemical and Life Sciences Laboratory. Robb Fraley, Monsanto Co. 4 p.m. B102 Chemical and Life Sciences Laboratory. “A Double-edged Sword: Metabolites in the Biology of Bacterial Pathogens.”

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CALENDAR. CONTINUED FROM PAGE 13

Great Hall, Krannert Center. Join School of Music faculty and students to celebrate the life of the late trumpeter profes- sor Michael Ewald. School of Music.

23 Sunday
Senior Recital. Emily Nash, violin. 5:30 p.m. Memorial Room, Smith Hall.

23 Monday
Master of Music Recital. Mat page, percussion. 7:30 p.m. Recital Hall, Smith Hall.

23 Tuesday
Doctor of Musical Arts Recital in Vocal Coaching and Ac- companying. Casey Robards. piano. 3:30 p.m. Recital Hall, Smith Hall.

23 Tuesday
Senior Recital. Andrew Schum- an, jazz saxophone. 7:30 p.m. Smith Hall.

1 Wednesday
Doctor of Musical Arts Recit- al. Brian Felix, jazz piano. 7:30 p.m. 25 Smith Hall.

2 Thursday
Junior Recital. Delanor Ben- son, mezzo-soprano. 1 p.m. Memorial Room, Smith Hall.

Graduate Recital. Jiao Bi, Sax- composition. 7:30 p.m. Music Building auditorium.

3 Friday
Jazz Forum. UI Jazz Combo. Dana hall, piano. Noon. 25 Smith Hall.

Junior Recital. Eric McKnight, oboe. 5:30 p.m. Music Build- ing auditorium.

Samofia da Camera: "Des Rosencavalier." Ian Hobson, maestro director and conduc- tor. 7:30 p.m. Foellinger Great Hall. Krannert Center. This concert version of the opera, directed by Nicholas DiVin- gilo, features new and return- ing vocalists from around the country.

4 Saturday
Master of Music Recital. Re- becca Devillamor, clarinet. 11 a.m. Memorial Room, Smith Hall.

Junior Recital. Andy McBe- rrel, percussion. 2 p.m. 25 Smith Hall.


Senior Recital. Gregory Polzak, composition. 5:30 p.m. Music Building auditorium.

Facade Recital. Jun Pugh, trombone. 7:30-7:30 p.m. Foellinger Great Hall, Krannert Center. School of Music.

Master of Music Recital. Lani- ta Chandler, piano. 7:30 p.m. Recital Hall, Smith Hall.

Senior Recital. Phil Peterson, saxophone. 7:30 p.m. Memo- rial Room, Smith Hall.

Meredith Monk and Vocal Ensemble: "Songs of As- cension." UI Concert Choir. Chester Abro, director. 7:30 p.m. Tyrone Festival Theater. Krannert Center. With visual elements by Ann Hamilton.

The second project that com- bines the talents of MacArthur Award recipients Meredith Monk and Ann Hamilton, "Global Transfer Afterglow: Grazyna Augustys, 9:30 p.m. Lobby, Krannert Center.

5 Sunday
Master of Music Recital. James Signorelli, saxophone. 2 p.m. Mu- sical Building auditorium.

UI Percussion Ensemble, Wil- liam Moore, director. 3 p.m. Foellinger Great Hall, Krannert Center. School of Music.

Senior Composition Recital. Cheryl Knipple and Moon Young Ha, composers. 5:30 p.m. Recital Hall, Smith Hall.

Master of Music Recital. Daodon Parcell, vocal jazz. 6 p.m. 25 Smith Hall.

Junior Recital. Rachel Watrig, violin, 7:30 p.m. Recital Hall, Smith Hall.

Brass Chamber Music. 7:30 p.m. Music Building auditorium.

Concerto Urbana. Charlotte Mattas Moore, director. 7:30 p.m. Memorial Room, Smith Hall.

2 films
19 Thursday
Slavic Plus Film Series: "Kornissáti." 7 p.m. OSF Foreign Languages Building. Slavic Languages and Litera- ture and Russian, East Euro- pean and Eurasian Center.

2 Thursday
Slavic Plus Film Series: "Grine Felder" ("Green Fields"). 7 p.m. Lucy Ellis Lounge, IHIO Foreign Languages Building. Slavic Languages and Litera- ture and Russian, East Euro- pean and Eurasian Center.

2 Friday
Junior Recital. UI vs. Pennsylvania State University. 5 p.m. Eichel- berger Field.

22 Sunday
Junior Recital. UI vs. Pennsylvania State University. 2 p.m. Eichelber- ger Field.

23 Sunday
Senior Recital. UI vs. Michigan State University. 3:00 p.m. Eichel- berger Field.

24 Saturday
Senior Recital. UI vs. Michigan State University. 3:00 p.m. Eichel- berger Field.

25 Saturday
Senior Recital. UI vs. Michigan State University. 3:00 p.m. Eichel- berger Field.

26 Sunday
Senior Recital. UI vs. Indiana University. 6:05 p.m. Illinois Field.

27 Sunday
Senior Recital. UI vs. Indiana University. 6:05 p.m. Illinois Field.

28 Sunday
Senior Recital. UI vs. Michigan State University. 1:05 p.m. Illinois Field.

29 Sunday
Senior Recital. UI vs. Michigan State University 2 p.m. Eichelber- ger Field.

30 Monday
Senior Recital. UI vs. Indiana University. 6:05 p.m. Illinois Field.

31 Tuesday
Senior Recital. UI vs. Indiana University. 3:05 p.m. Illinois Field.

Wednesday
Senior Recital. UI vs. Indiana University. 1:05 p.m. Illinois Field.

et cetera
19 Thursday

20 Friday
"A Call to Arts: Open Cri- tiques." Rosalind Schwartz, UI. 7 p.m. UI Smith Farm Studios, 213 S. Griffin Drive, Cham- paign. Krannert Art Museum and 40 North/88 West.

26 Wednesday
Around the World Wednes- days. 3:30-4 p.m. noon. Spurlock Museum. Crafts and activities from around the world. $2 do- nation. Spurlock Museum.

31 Tuesday

T.P.O. Company Demonstrations.
5, 3:30, 6, 6:30 and 7 p.m. Cobwell Playhouse. Krannert Center. Explore the stage craft and artistry of the T.P.O. Company’s "Farfalle (Butterflies)." Free tickets re- quired. 333-6280.

"Two Cultures, One Love, Multicultural Dating," 7 p.m. Multipurpose Room #3, ARC Counseling Center.

2 Thursday

T.P.O. Company Demonstrations.
5, 3:30, 6, 6:30 and 7 p.m. Cobwell Playhouse. Krannert Center. Free. tickets re- quired. 333-6280.


"Decolonized Viewing: A Work- shop on Analyzing TV Com- edy." Dustin Talmadge, UI.

3 Friday
"Butterflies." Free: tickets re- quired: 333-6280.


exhibits
"# Decade of the Humanities at IPRH" Through May 4. IPRH. 605 W. Pennsylvania Ave. 8:30 a.m.-5 p.m. Monday- Friday.

"Collating Editions: Editing Old English Texts and the Evolution of Anglo-Saxon Print in Print" Through April 30. Rare Book and Manuscript Li- brary, 346 Library.

"Identity" Through April 5. 3 May 4. 3 Illini Union Art Gallery.

"Children Just Like Me" Through May 9.

Set: CALENDAR, Page 15

26 Wednesday
Around the World Wednes- days. 3:30-4 p.m. noon. Spurlock Museum. Crafts and activities from around the world. $2 do- nation. Spurlock Museum.

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Inside Illinois

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March 19, 2009

Inside Illinois
A first look at genetic dynamics of inbreeding depression

By Diana Yates
Life Sciences Editor

Researchers have taken a first look at the broad genetic changes that accompany reproductive declines in inbred populations.

Although scientists have known for more than a century that small populations of closely related plants or animals are likely to suffer from low reproductive success, the exact mechanism by which this “inbreeding depression” occurs is still the subject of debate.

The study, in Conservation Biology, is the first to look at inbreeding depression as it relates to the expression of all of an organism’s genes — to see which are more or less active in inbred populations and what they do.

By mating male and female fruit flies that were genetically identical to one another, UI researchers were able to determine how much the flies’ genetic likeness reduced their reproductive success. They repeated the experiment in six lines of fruit flies that were identical to one another except for the composition of one of their chromosomes; only the genes of chromosome three differed between the lines.

The researchers also crossed the three highest inbred lines to one another, creating outbred lines that could be compared with the inbred ones.

Using oligonucleotide microarrays, which can measure the activity of all of an organism’s genes at once, the researchers were able to see which genes were more or less active (up-regulated or down-regulated) in the inbred versus the outbred lines.

The six inbred lines of fruit flies showed a great deal of variation in the degree of inbreeding depression, from 24 to 79 percent when compared with non-inbred flies. The researchers also found that 567 genes in the high inbred line versus the outbred line were expressed at higher or lower levels than the same genes in the other inbred line. Only 62 percent of these genes were located on chromosome three (the only chromosome that differed between the lines) indicating that variation in chromosome three had altered gene expression on the other chromosomes.

“These results suggest that a significant amount of inbreeding depression is due to a few key genes that affect the expression of other genes,” said animal biology professor and department head Ken Paige, who led the study.

Of particular note were identical changes in the expression of 46 genes in all three of the high inbreeding depression lines, Paige said, making them of interest for further study.

Genes associated with inbreeding depression could be grouped into three broad categories of function: those involved in metabolism, stress and defense. This is a surprising finding, Paige said, “because we think of inbreeding as a random process.”

Many metabolic genes were up-regulated in the inbred flies, as were genes that fight pathogens such as bacteria or viruses. A third group of genes was down-regulated. They code for proteins that protect the body from reactive atoms and molecules that can damage cells.

These changes in gene expression are shunting energy away from reproduction and undermining some basic cellular functions, Paige said.

Inbreeding depression is thought to result from a deleterious pattern of inherited genes. In general, an organism with two parents has two versions of every gene – one maternal and one paternal. These different flavors of a gene are called alleles. If the maternal and paternal alleles differ, one of them usually dominates, conferring all of its qualities to the offspring. The other, silenced allele is called “recessive.”

Some alleles are detrimental to health. Most of these are recessive, meaning that they do not cause problems unless the organism inherits two copies of them – one from each parent. When the allele often masks the deleterious effects of the other.

But the interaction of paternal alleles in their offspring can be quite complex. Sometimes an allele causes a disease or disorder even if it is paired with a different allele. Sometimes several genes influence a single trait. And sometimes two different alleles can lead to a higher level of gene activity than occurs in either parent (this last phenomenon is called overdominance).

When closely related individuals mate, their offspring are likely to end up with identical alleles for many traits. Many potentially harmful recessive alleles are no longer masked by dominant alleles, so more genetic disorders arise. Similarly, offspring that inherit two identical alleles for some traits will also lose any advantages once conferred by overdominance.

Biologists have long wondered which of these mechanisms causes the reproductive failures seen in inbred populations. “It’s still being debated,” Paige said.

The study found that about 75 percent of the reproductive declines seen in the inbred flies could be attributed to the loss of dominant alleles and the subsequent “unmasking” of deleterious alleles. More surprisingly, the data also indicated that 25 percent of the declines were due to the loss of overdominance.

“That means we have two mechanisms ongoing,” Paige said. “One does predominate, but the other may be important, too.”

The fact that a relatively large number of genes are affected by inbreeding is bad news for conservationists hoping to save small populations of plants or animals from extinction, Paige said. It means that there is no easy fix to the problem of inbred populations. The best approach is to try to preserve and maintain genetic diversity in natural populations well before they begin their slide into an “extinction vortex,” he said.

Co-authors on the study included natural resources and environmental sciences graduate student Julien Ayroles, animal biology professor Kimberly Hughes, animal biology doctoral student Kevin Rowe, animal biology technician Melissa Reedy, animal biology postdoctoral researcher Jenny Drnevich, animal biology professor Carla Cáceres, and animal sciences professor Sandra Rodríguez-Zas, who also is an affiliate of the Institute for Genomic Biology.