Fueling change
Grant to fund bioprocessing research lab

By Sharita Forrest
Assistant Editor

The UI will receive a grant of $3.2 million from the state of Illinois to fund the Integrated Bioprocessing Research Laboratory at the UI’s Urbana campus.

Gov. Rod Blagojevich announced June 28 that funds would be allocated for planning the facility through the Opportunity Returns program, an economic development program that provides job growth throughout Illinois by pairing companies and communities.

In a news release announcing the grant, Blagojevich said: “Post-harvest research is critical to growing the agricultural economy and creating more jobs in Illinois. This state-of-the-art facility will encourage even more research discoveries and the education of future generations that will help Illinois’ food and agriculture industries thrive and put more people to work.”

Hans-Peter Blaschek, a professor of food microbiology, is coordinating development of the laboratory. Blaschek also is assistant dean in the Office of Research for the College of Agricultural, Consumer and Environmental Sciences, and is a faculty member in the department of food science and human nutrition and in the Institute for Genomic Biology.

The 60,000-square-foot facility will support multistage processing that converts soybeans, corn and other grains, lignocellulosic-based co-products and food processing byproducts into new and improved feeds, foods, energy sources, industrial feed stocks and chemicals. The multi-disciplinary facility will focus on the chemical, physical and biological conversion of renewable feed stocks into biofuels and will provide opportunities for developing new production processes for biofuels, industrial chemicals and nutracueticals.

Often referred to as phytochemicals or functional foods, nutracueticals are natural, bioactive chemical compounds that promote health, prevent disease or have medicinal properties.

The United States is increasing use of bio-based materials and bioenergy, and corn and soybeans could serve as the plant technology platforms for a new biobased economy, said David Chicoine, UI vice president for technology and economic development.

The new laboratory also presents the opportunity to make the state of Illinois, already one of the largest producers of corn and soybeans, a leader of a new bio-based economy by building upon earlier discoveries and creating jobs and industries.

“The time is ripe for development of a unique bioprocessing facility since the chemical industry is expected to transition from petroleum-based processes to bio-based technology,” Blaschek said. “The IBRL will allow translational research to be carried out from the laboratory bench to the pilot-scale level in anticipation of commercialization.”

Robert Easter, dean of the College of Agricultural, Consumer and Environmental Sciences, and Blaschek have talked with officials at Archer Daniels Midland Co. in Decatur and other agricultural companies to see IBRL.

Alternative fuels

Hans-Peter Blaschek, assistant dean in the Office of Research in the College of Agricultural, Consumer and Environmental Sciences, is coordinating development of the Integrated Bioprocessing Research Laboratory, a state-of-the-art facility focused on the conversion of renewable feed stocks into biofuels. The facility also will be a test bed for eco-friendly construction techniques.

Music school gift includes instruments, books, art, artifacts, property

By Melissa Mitchell
News Bureau Staff Writer

The UI School of Music has long been home to some of the top ethnomusicology programs. Now, a major gift has increased the size and brilliance of the school’s star on the world music map.

The multimillion dollar gift to the UI music school includes many instruments from Indonesia, India, Turkey, Afghanistan and elsewhere. The school’s star on the world music map.

It also comes equipped with several gamelan orchestras. The Indonesian equivalent of the Western symphony orchestra, a gamelan consists of percussion and string instruments, metallophones of all shapes and sizes, gongs, chimes and drums.

The gamelan at the Bali site are in addition to three others that arrived at Illinois recently along with Indian sitars, vinas and tamboras, Turkish-Arabic takhts, African drum ensembles and scores of other instruments and artifacts.

A recent gift to the UI music school includes many instruments from Indonesia, India, Turkey, Afghanistan and elsewhere.

Furthermore, because of the UI can find and correct bugs in software learning that the center had received.

This grant is a powerful endorsement of the pathway Krannert Center has been embarked on in recent years, and will propel us vigorously forward along this pathway in the next set of years ahead,” Ross said. “It is also a strong vote of confidence in the quality and vision of leadership at Illinois and in the network of relationships the center enjoys across campus and in the community.

“Furthermore, because of the highly competitive nature of the grant program, the recognition that accompanies this award brings the center, the university and Champaign-Urbana into the consciousness of the elite field of music,” Ross said.

The UI’s Krannert Center for the Performing Arts is one of only three university-based performing arts presenters in the nation selected to receive major funding through a new initiative of the Doris Duke Charitable Foundation.

The center will receive $1,125,000 over three years from the foundation through its Leading College and University Presenters Program. The program is part of the foundation’s new College and University Presenters Program, designed to encourage innovative projects that integrate the performing arts into academic life and the surrounding community.

“I could not be more pleased, nor more grateful,” said Krannert Center director Mike Ross.

Kraner Center receives major grant from Duke Foundation

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“I could not be more pleased, nor more grateful,” said Krannert Center director Mike Ross.

Risking business

Open-air field trials have indicated that global food supplies could be at risk unless changes are made in production strategies.

Debugging software

A new suite of software tools developed at the UI can find and correct bugs in software programs by inferring the programmer’s intentions.
Valerie Hotchkiss, the head of the library.

“Rare Book & Manuscript Library at the University of Illinois in Urbana-Champaign is a leading center for the study of the history of the printed word, the history of ideas and the history of culture,” said Hotchkiss.

“The grant supports a ‘retrospective’ project to catalog the library’s 370,000 rare holdings that have yet to be cataloged. The catalog records will be available online through an open catalog and the national database OCLC, thus ‘reveling’ to any Internet user the rare and unique items that are now hidden in our library,” Hotchkiss said.

“Increased visibility to the hidden treasures of one of the world’s premier library collections will be available to our community and the world, enhancing the library’s role as a uniquely innovative environment where students and faculty members can accomplish the task, most of them graduate students,” said Hotchkiss.

“Students will be drawn from the university’s many programs, including Arts and Sciences, Business and Economics, and the College of Liberal Arts and Sciences,” said Hotchkiss.

“Students should take three years to complete and will be done entirely in-house. Five full-time-equivalent catalogers will be hired to do the Rare Book Library’s 370,000 rare holdings that have yet to be cataloged. The catalog records will be available online through an open catalog and the national database OCLC, thus ‘reveling’ to any Internet user the rare and unique items that are now hidden in our library,” Hotchkiss said.

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**On the Job**

Brenda Stevenson

During Brenda Stevenson’s nearly 31-year career at the UI’s Urbana campus, she’s given her co-workers plenty of food for thought – so much sustenance, in fact, that people sometimes have requested that she quit bringing her homemade baked goods to work because their waistlines were expanding. Stevenson, who has groceries to cook and bake and frequently is told she should open her own bakery, once raised the money to host a family reunion by baking and selling cookies, sweet potato pie and other treats. Stevenson began her career as a clerk typist in the College of Engineering in November 1975, and transferred to the records office of the Graduate College in 1982, where her initial position was data-entry operator and she later became an admissions and records officer. Since 1999 Stevenson has worked for the College of Law, where she is the registrar.

Tell me about your responsibilities in your current position.

I register the incoming classes, which generally consist of 125 students each year, and monitor the registration. I generate reports for the awarding of academic honors given to our first-, second- and third-year students. I assist the Office of International Programs with summer programs for law students, lawyers and other professionals by processing the registrations and recording courses. I perform degree audits three times a years for the May, August and December degree candidates. I also work with Study Abroad, off-campus programs and with different graduate departments that the college has joint-degree programs with. Registration is the most-time consuming part of what I do. It includes interpreting and implementing university policies, procedures, and academic policies.

What’s kept you here on campus so many years?

I have always worked really closely with students, which I enjoy. Did you start at the university right out of high school?

Yes, I received my elementary and high-school education in Chicago. After high school, I attended the university for two years, majoring in accounting. How do you learn to be a great cook?

While I was growing up, my mother baked daily. When I started showing interest, she would let me help make oatmeal cookies. It became an every-Saturday event for us. Seeing people’s reactions to my mother’s cooking was so pleasurable. She baked wonderful rolls, and she’d share the recipe but the rolls never turn out as good when someone else makes them. There are some special little things that she does that she doesn’t share, and when you tell her that your rolls didn’t turn out as good as hers, she’d just smile.

I bake all sorts of cookies, cakes and pies. My favorite dessert to bake is German chocolate cake. I don’t collect a lot of recipes or cookbooks; I have a few standard recipes that I stick to.

How do you stay so trim with all that cooking?

I’ve always been active. I love working out to Taer Bo and aerobics and aim to work out at least 45 minutes per session. My regular work out is to walk around Centennial Park, then go home and put time in on the treadmill and weight bench. I also bowl on three leagues, including the faculty-staff league, a travel league and the Ebonite League, the only black league in town. My average is 177.

What else do you do when you’re not working?

I like to crochet and do needlepoint. I enjoy making afghans. I’m a big kid at heart: My TV stays on the Cartoon Network, Disney and Nickelodeon. I have a big collection of Disney movies. My favorite is “Lady and the Tramp.”

- Interview by Sharita Forrest

**book corner**

**White House rhetoric runs counter to policy realities**

President George W. Bush frequently has been criticized for being verbally challenged, but a rhetorical analysis of the Bush White House, based on the public record, argues that the president and his colleagues have demonstrated an impressive facility with words.

According to the researchers, whose findings appear in a new book, “Globalization: Empire: The Bush Doctrine, Free Markets, and the Twilight of Democracy” (University of Alabama Press), the Bush presidency has built a verbal “opera of deception” characterized by fabricated figures and lies, disinformation and propaganda, posturing and threats and an arsenal of rhetorical tricks, chief among them what rhetoricians call logical fallacies. The researchers also say that the public statements and policies of the Bush White House generally have clashed with each other. The authors say irregular but common practices of the administration – what the researchers call “crony capitalism,” “patrician provincialism,” “private globalization” and “institutionalized privatization” – are being carried out by the Bush administration, but cheating U.S. taxpayers out of billions of dollars and potential social services, threatening to send the United States into a “numbing economic morass,” and under-cutting democracy.

Collectively, the deceptions and policies constitute “a massive campaign to change the ways Americans think about democracy, globalization, and empire,” wrote authors Stephen Hartnett, a UI professor of speech communication, and Laura Ann Stengrim, a UI doctoral candidate.

Looking at the relationship between the Bush administration’s public statements and its policies on many issues – weapons of mass destruction, waging war on Iraq, the reconstruction of Iraq, Sept. 11, Abu Ghraib and the CIA leak incident – Hartnett and Stengrim found “a powerful bond between fraying and increasingly deceptive norms of public discourse and post-9/11 political and economic policies.”

Their analysis, which uses case studies based on historical research, evidence-based arguments and detailed rhetorical criticism, illustrates, among other things, “the remarkably complicated ways the Bush administration has used 9/11 as an elastic justification for waging wars of globalization and empire under the banner of free trade and democracy.”

- By Andrea Lynn, News Bureau

**Advertising and its methods put ‘on trial’ in 1930s**

In the current world of product placement, cross-promotion, pop-up ads, and ad-driven politics, it’s hard to imagine there was a time when advertising as an institution was severely challenged.

“We’ve come to see advertising as a given, ‘as part of who we are,’” says Inger Stole, a professor in the Institute for Advertising and its methods faced “ferocious political opposition” in the U.S., Stole writes in her new book “Advertising on Trial: Consumer Activism and Corporate Public Relations in the 1930s” (UI Press, 2006).

The book chronicles the little-known story of how a consumer movement rose to prominence in the 1930s, successfully fought back with new techniques of corporate manipulation, and under-cutting democracy.

A prime target of the movement was advertising, which was viewed by many Americans as “business propaganda” and as “a controversial, even scorned, undertaking,” Stole wrote. The movement objected to the industry’s view of consumers as “helpless and irrational” and to its reliance on emotional appeals, often playing to people’s fears and insecurities.

Instead, the consumer advocates wanted advertising that provided only legitimate product information, such as that required by any business or government purchaser, Stole wrote. Because it failed to provide that, she believed, advertising “was not just flawed … it was amoralistic,” she wrote.

The emergence of radio broadcasting in the 1930s as an explicitly advertising-based medium also fanned the flames of public discontent with advertising, Stole wrote. In the argument the story of the consumer movement in the 1930s strongly resembled that of the struggle over U.S. broadcasting regulations that played out over the same period.

- By Andrea Lynn, News Bureau

**Commercial interruption: A book by Inger Stole, a professor in the Institute of Communications Research, chronicles how consumer advocates rebelled against the proliferation of advertising in the early part of the twentieth century.**

The advertisers and their advocates fought back with new techniques of corporate public relations, recasting their case for the benefits of advertising and working to discredit the movement, according to Stole.

Because most newspapers, magazines and radio stations were dependent on advertising for the time of the movement, “the media basically did not write or say much about this process,” Stole said.

Ultimately, consumer activists lost their battle for legislation and regulation, settling for a severely watered-down bill, the 1938 Wheeler-Lea Amendment, still the main law regulating advertising, Stole wrote. “Advertising never again faced a direct challenge to its legitimacy.”

“It was a period, however, when things could have gone quite differently,” she said, and the history of the movement may hold as much relevance today as it did in the 1930s, if not more.

- By Craig Chamberlin, News Bureau

**July 20, 2006**

**Inside Illinois**

**Academic Human Resources • Suite 420, 807 S. Wright St., MC 310 • 333-6747**

Listings of academic professional and faculty member positions can be reviewed during regular business hours or online.

For faculty/teaching positions: www.ahr.uiuc.edu/jobs/advlist.html

For acpo employment opportunities: https://bnet.ahr.uiuc.edu/and employment/index.cfm

Current UI employees and students can receive e-mail notification of open positions by subscribing to the academic jobs listserv (under Career Info): www.ahr.uiuc.edu#acjob

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Information about staff employment online at www.ps.oeui.uc.edu. Paper employment applications or paper civil service exam requests are no longer accepted by PSO. To complete an online employment application and to submit an exam request, visit the Online Employment Center: https://bnet.ahr.uiuc.edu/and employment/index.cfm

www.news.uiuc.edu/news/06/0626advertising.html
Food-crop yields in future greenhouse-gas conditions lower than expected

By Jim Barlow

Open-air field trials involving five major food crops grown under carbon-dioxide levels projected for the future are having profound impacts on the things we do here,” said Karl Kramer, the director of the UI School of Music. “We are one of the finest music schools in the nation, and Dr. Brown’s generous gift is a wonderful complement to its activities,” said Chancellor Richard Herman. “As our campus becomes increasingly global, the Bali site – as well as Dr. Brown’s other gifts – will offer a unique opportunity for our students, faculty and others to study, create and learn about world music.”

Details of how the center, the Bali property and other items will be put to use by the school are still unfolding. The music school director expects a more complete program and plan for the acquisition of instruments to likely evolve over four to five years.

Kramer does have a few directions and goals in mind. Chief among them is the desire to keep alive, and build upon, Brown’s own legacy, which included fostering cross-cultural understanding through music appreciation and participation, particularly among young people.

“One of the principal goals of the center is to integrate non-Western – and perhaps vernacular – music traditions into the curriculum of music education majors, who after graduation typically teach at public schools and community organizations in Illinois and elsewhere throughout the United States,” he said. “Ultimately, I would like to implement and develop a revolutionary degree program specifically geared toward preparing teachers in world music studies that would be recognized and be appropriate for public-school teaching.”

Kramer and others – both in the school and across the campus in a variety of international programs and study abroad – are enthusiastic about the variety of possibilities associated with the gift, including research, performance, study abroad and community outreach opportunities.


Capwell noted that the center’s location at the university will not only cement the UI’s reputation for ethnomusicalogical scholarship, but allow the school to expand in areas previously not possible, due to a lack of resources.

Capwell led 13 students on a study tour to “Flower Mountain” in 2000 as part of a university-wide, Ford Foundation-supported program.

“The students had studied Balinese musical performance at the UI with a Balinese teacher, I Ketut Gede Answa, the semester preceding the trip, and continued their studies with him in Bali that summer,” Capwell said.

Answa, who most recently was on the faculty of the University of Missouri at Kansas City, will return to the UI this fall as the new center’s first faculty appointment. Answa will lead three sections of Balinese gamelan, which will be open to UI students as well as interested community members.

“One of the most important concepts associated with this gift and new center,” Kramer said, “is that we will have native musicians teaching native music.”

Furthermore, he emphasized, the sizeable collection of instruments included in the gift will be tuned, reconditioned as necessary, but above all, put into service.

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Worldly gift A gift from the late ethnomusicologist Robert E. Brown (above) includes Brown’s Bali property, Flower Moutain, which includes a music library (top), student dormitories and rehearsal facilities (at left).

Older, closed-condition studies occurred in greenhouses, controlled environmental chambers and transparent field chambers, in which carbon dioxide or ozone were easily retained and controlled. Such tests provided projections for maize, rice, sorghum, soybean and wheat – the world’s most important crops in terms of global grain production.

By 2050 carbon dioxide levels may be about 1.5 times greater than the current 380 parts per million, while daytime ozone levels during the growing season could peak on average at 80 parts per million (now 60 parts per billion).

Older studies, as reviewed by Intergovernmental Panel on Climate Change, suggest that increased soil temperature and decreased soil moisture, which would reduce crop yields, likely will offset in C3 crops by the fertilization effect of rising CO2, primarily because CO2 increases photosynthesis and decreases water use.

Although more than 340 independent chamber studies have been analyzed to project yields under rising CO2 levels, most plants grown in enclosures can only generalize greatly from those grown in farm fields, Long said. FACE has been the only technology that has tested effects in real-world situations, and, to date, for each crop tested yields have been “well below half the value predicted from chambers,” the authors reported.

The results encompassed grain yield, total biomass per bil-

The FACE data came from experimental wheat and soybean fields at Maricopa, Ariz.; grasslands at Eschikon, Switzerland; managed pasture at Bulls, New Zealand; rice at Shimoikina, Japan; and soybean and corn crops at Illinois. In three key production measures, involving four crops, the authors wrote, just one of 12 factors scrutinized is not lower than chamber equivalents, Long said.

“The FACE experiments clearly show that much lower CO2 fertilization factors should be used in model projections of future yields,” the researchers said. They also called for research to examine the influences of CO2, O3, temperature and soil moisture.

While projections to 2050 may be too far out for commercial considerations, they added, “it must not be seen as too far in the future for public sector research and development, given the long lead times that may be needed to avoid global food shortage.”

Long and four colleagues were co-authors: Elizabeth A. Ainsworth, professor of plant biology, Andrew D.B. Leaky, research fellow in the Institute of Genomic Biology at Illinois; Don-

The Illinois Council for Food and Agricultural Research, Ar-

This program was supported by the Illinois Council for Food and Agricultural Research, the Illinois Bureau of Science, the Illinois Council for Food and Agricultural Research, the Illinois Bureau of Science, and the Illinois Council for Food and Agricultural Research.

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Groundbreaking research Open field experiments by Stephen Long,왜

Long, professor of plant science and crop science, and colleagues Elizabeth A. Ainsworth, professor of plant biology, and Andrew D.B. Leaky, research fellow in the Institute of Genomic Biology, indicate that future crop yields may be dramatically reduced by rising levels of ozone and carbon dioxide in the atmosphere.

USDA and UI Experiment Station funded the research.

This article was written recently by Jim Barlow when he was life sciences editor for the News Bureau. He became director of science communication at the University of Oregon on July 10.
Historic Lincoln Hall receives funding for planning much-needed renovations

By Sharita Forrest
Assistant Editor

Officials from the UI, the Illinois Legislature and the state’s Capital Development Board recently announced that the state was giving the university $3 million to begin planning renovations to historic Lincoln Hall on the Urbana campus. UI President B. Joseph White; Jan Grimes, executive director of the Capital Development Board; state Rep. Naomi Jakobsson; and Sarah Mangelsdorf, the dean of the College of Liberal Arts and Sciences at Urbana, made the announcement July 7 on the east steps of Lincoln Hall.

Built in 1911, Lincoln Hall has not had any significant refurbishments since the west half of the building and the theater were constructed in 1930, although the building is one of the most used instructional buildings on campus.

The renovations will include upgrades to the building’s electrical, lighting, heating, ventilation, air-conditioning and computer network systems in addition to new flooring, ceilings and wall finishes. The building’s interior will be reconfigured to optimize instructional space, which will be concentrated on the first two floors and the backstage area of the theater. The backstage area has been unused for 25 years since the theater department relocated to Krannert Center for the Performing Arts. The top two floors will be used primarily for offices for faculty members.

Although the remodeling will be significant, the speakers offered assurances that Lincoln Hall’s historic character would be preserved.

In a news release from Gov. Rod Blagojevich’s office, UI Chancellor Richard Herman said: “Lincoln Hall has played a major role in the academic lives of our students for almost 100 years. It is home to a number of core disciplines, and its classroom space is frequented by our students more than any other place on campus. Refitting Lincoln Hall to better serve the changing needs of current and future students recognizes its place in our history, as well as its future role in establishing the state’s flagship campus as pre-eminent among public institutions in the nation.”

The UI sought state appropriations to renovate the aging building in its annual budget requests to the state in recent years, but the state did not approve appropriations for any new capital projects because of the state’s ongoing economic constraints.

White said that the state’s decision to release the funds was “really personal with me because I’ve fallen in love with Lincoln Hall.”

The improvements to Lincoln Hall are expected to cost about $55.8 million. When asked how the university would obtain the remaining funds, White said the university wouldn’t begin the project until it had the financing available or had identified a source of funds. He said he did not anticipate implementing special tuition increases to pay for the renovations.

However, the renovations could be among the projects funded in part by the Academic Facilities Maintenance Fund Assessment, a fee that all new UI students will begin paying this fall to help address the university’s $617 million backlog of deferred maintenance projects.

“I’d love to begin the renovations of this building in 2008 and get them done in two years,” White said, but added that the university would first have to find the funding to make that happen.

This month, the university is expected to select a design firm for the Lincoln Hall remodeling project. The Capital Development Board, which manages all construction, renovation and repair projects for the state, will oversee the project.

The IBRL continued from Page 1

About joining the UI in the IBRL, ADM is one of the world’s largest processors of corn, soybeans, wheat and cocoa.

The IBRL also will be a “green building” with energy efficient and environmentally friendly design features. The IBRL, along with a Workforce Development Center at Heartland Community College in Bloomington, Ill., will be one of at least three state construction projects that will be used for case studies of green building materials and techniques.

The facility is expected to cost about $20 million and construction may begin later this fiscal year or in FY2008, once funding is secured and a site is selected. The planning and design work will provide for site improvements, including extending utilities and roadways.

The facility is part of the first phase of a six-phase plan to modernize the South Farms, which began in September 2003 with the groundbreaking for the new beef and sheep complex, a $10 million complex of livestock barns, offices and facilities for mixing feed and storing machinery that was constructed near the intersection of Race Street and Old Church Road between Urbana and Savoy.

Like the new beef and sheep facilities, which opened in 2004, the IBRL will replace outdated facilities and will accommodate the technologies needed for research.

The modernization plans for the South Farms also include construction of facilities for swine and horses, an 82,000-square-foot Natural Resources Facility that will support research and education on vegetable and fruit crops as well as forestry and natural systems, and a Crops Complex that will serve as headquarters for the Crops Section and house the UI Plant Diagnostic Clinic.
Software tools detect bugs by inferring programmer’s intentions

By James E. Kloeppel
News Bureau Staff Writer

The task of debugging huge computer programs can be made faster and easier by using new software tools developed by programming experts at the UI.

Computer science professor Yuanyuan Zhou and her students have assembled a suite of software tools that can find and correct bugs by inferring the programmer’s intentions. The tools draw from observations on how programmers write code.

“Most bug-detection tools require reproduction of bugs during execution,” Zhou said. “The program is slowed down significantly and monitored by these tools, which watch for certain types of abnormal behavior. Most of our tools, however, work by only examining the source code for defects, requiring little effort from programmers.”

Copy-pasted code, for example, often appears in large programs. While saving considerable programming effort, copy-pasted code can be the source of numerous bugs. Zhou’s copy-paste tool, called CP-Miner, uses data-mining techniques to find copy-pasted code in the program and examine and correct that code for consistent modifications.

CP-Miner has found many bugs in the latest versions of large open-source software used in the information technology industry, Zhou said. CP-Miner is fast and efficient – it can scan 3-4 million lines of code for copy-paste and related bugs in less than 30 minutes.

Large programs also tend to follow many implicit rules and assumptions, so Zhou and her students developed a related tool, called PR-Miner, to detect when those rules have been broken. Like CP-Miner, PR-Miner is based on data-mining techniques.

“First, we mine the source code for patterns, repetitions and correlations that point to implicit programming rules and assumptions,” Zhou said. “Then we check that those rules and assumptions have not been violated.”

PR-Miner also is very fast and has found many bugs in the latest open-source software. It takes PR-Miner only a few minutes to scan 4 million lines of code.

Not only are their efforts directed toward detecting, diagnosing and fixing bugs, Zhou and her students also are exploring techniques that allow software to survive in the presence of bugs. Rx, for example, is a recovery tool that allows software to survive by treating bugs like allergies.

“If you are allergic to cats, you try to avoid cats,” Zhou said. “In much the same way, Rx is avoidance therapy for software failure. If the software fails, Rx rolls the program back to a recent checkpoint, and re-executes the program in a modified environment.”

A fourth tool, called Triage, diagnoses software failures at the end-user site. Following a human-like diagnosis protocol, Triage rapidly identifies the nature of the problem and provides valuable input to help programmers quickly understand the failure and fix the bug.

“If something bad happens or the software crashes, Triage’s diagnosis protocol will start automatically and quickly suggest a temporary fix until programmers can release a fixing patch,” Zhou said.

In addition to being fast and efficient, Zhou’s software tools are scalable and can be tailored for specific software programs, including programs running on parallel processors.

The work was funded by the National Science Foundation and the Intel Corp.
Campus Recreation

Take an outdoor adventure to Utah

Campus Recreation’s Outdoor Adventures will host a canoe trip to Green River, Utah, Aug. 8-18. Travelers will enjoy eight days of canoeing and camping on the Green and Colorado rivers in the Canyonlands area of Southeast Utah. Experience in canoe paddling, small boat safety and camping is recommended but not required.

Advanced registration is required. The fee is $550 for UI students and Campus Rec members and $650 for non-members. The fee covers the cost of transportation, food, canoes, group equipment, fees and permits and the trip leaders. For registration, call 333-8747, or visit www.cam-
purpose.uiuc.edu or the Outdoor Center.

Getting the word out …

New online library access for alumni

The UI Libraries and the UI Alumni Association are introducing a new service for UI alumni and are hoping UI colleges and departments can help spread the word among alumni.

Since July 1, Alumni Association members now have online access to more than 4,000 magazines, newspapers, periodicals, scientific and professional journals and trade publications. The database, ProQuest/ABI-INFORM Complete, includes current and archived issues from the full text and abstract versions. In addition, users can perform basic and advanced queries such as subject and keyword searches.


Although license restrictions prohibit alumni access to all of the databases that the three UI libraries make available to the campus communities, this new benefit will extend the reach of the university’s libraries to UI alumni living in all states and more than 125 countries. Until now, these services have been available only to UI faculty and staff members and students with a university net ID.

To access this service, visit www.uaia.org/proquest.

For more information on this service or information about membership in the Alumni Association, contact Joe Rank, j-rank@uiiiu. edu, 333-1471.

University Library

Library now offers “Buy a Book Service”

The UI Library has added a service. The largest public university collection in the world, housing nearly 2 million items, now offers its users a “Buy a Book Service.”

Linked to the library’s Web site, the book-purchase service gives users “easy and quick access to local and online booksellers,” said Lynn Wiley, head of acquisitions, so that when a title is not available through the online catalog, or when a library user prefers to own a book, the option to purchase is only a couple of clicks away.

UI scientist develops enzyme inhibitor that may slow cancer

By Phyllis Picklesimer

ACES Media Communications Specialist

UI scientist Tim Garrow, in collaboration with Jiri Jiracek of the Czech Academy of Sciences, has applied for a provisional patent on a class of chemicals that has future therapeutic uses in medicine, specifically cancer treatment.

“These chemicals are potent inhibitors of an enzyme called betaine-homocysteine-S-methyltransferase (BHMT),” Garrow said. “BHMT catalyzes a reaction that converts homocysteine to methionine. Because cancer cells require high levels of methionine, the ability to slow methionine’s production could result in a treatment that will selectively inhibit cancer growth,” the UI professor of nutrition said.

“Methionine, an essential amino acid, is required for several important biological processes, including synthesis of a compound that cancer cells require more than other cells. “When scientists restrict dietary methionine in animals with cancer, cancer cells are more acutely affected than others,” Garrow said.

Many drugs work by inhibiting the action of an enzyme, including the statin drugs used to lower cholesterol, he added.

Garrow became interested in BHMT, which is abundant in the liver and present in lesser amounts in the kidneys, because elevated levels of blood homocysteine have been linked with a number of diseases, including vascular disease and thrombosis.

“Our lab has always been interested in BHMT’s role in modulating plasma homocysteine. There is evidence linking BHMT with different forms of tissue injury,” said roller Judith’s lab at the University of Michigan solved BHMT’s crystal structure.

“That breakthrough enabled us to look at the enzyme in three dimensions, which helped us design inhibitors for it. Several of those compounds were very effective in blocking binding of the enzyme’s normal substrates,” he said.

Injecting one of these BHMT inhibitors into the abdomens of mice resulted in changes in metabolite concentrations and elevated levels of homocysteine in the animals, showing that “our chemical inhibitor made its way from the abdominal cavity into the mouse’s liver, where the inhibitor blocked the BHMT-catalyzed reaction as we thought it would.”

Garrow believes BHMT inhibitors may work best in concert with other drugs. “In today’s medicine, there’s rarely one magic bullet drug. We know that when you decrease the availability of methionine to cancer cells, another cancer drug called cis-platin works better. So a drug that inhibits BHMT, which increases methionine availability, may well enhance the efficacy of another cancer treatment drug,” he said.

Garrow’s work with BHMT in mice was published in the June issue of the Journal of Nutrition. An article detailing the development of the BHMT inhibitor was published in the June issue of the Journal of Medicinal Chemistry.

Garrow’s funding was provided by the National Cancer Institute. He and Jiracek have just received an NIH grant specifically to continue their study of BHMT inhibitors.
Entries for the calendar should be sent 15 days before the desired publication date to
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