Research suggests that fitness may reduce inflammation

By Melissa Mitchell
News Bureau Staff Writer

Although a number of studies have suggested that regular exercise reduces inflammation—a condition that is predictive of cardiovascular and other diseases, such as diabetes—it’s still not clear whether there is a definitive link. And if such a link exists, the nature of the relationship is by no means fully understood.

A recent study by kinesiology and community health researchers at the UI provides new evidence that may help explain some of the underlying biological mechanisms that take place as the result of regular exercise. According to the researchers, that knowledge could potentially lead to a better understanding of the relationship between exercise and inflammation.

The objective of their research was to examine the independent effect of parasympathetic tone—in this case, determined by assessing heart-rate recovery after exercise—on circulating levels of C-reactive protein (CRP). Parasympathetic tone and its inverse function—sympathetic tone—are components of the autonomic nervous system. CRP, which is secreted by the liver, circulates in the bloodstream and is a biomarker for inflammation in the body.

“Many researchers have suggested that the sympathetic nervous system speeds things up, and the parasympathetic slows things down,” said Victoria J. Vieira, a predoctoral fellow in kinesiology and community health, and the primary author and designer of the study, published in a recent issue of the Journal of the American Geriatrics Society. “So when you’re exercising, your sympathetic nervous system will be on, increasing your heart rate, your respiration, etc. Once you stop, your body always tries to get back to homeostasis. So the parasympathetic nervous system kicks in to get everything back down to baseline levels.”

Co-author and kinesiology and community health professor Jeffrey A. Woods said cardiologists are already routinely gauging CRP levels in much the same way they look at lipids panels to assess cholesterol levels.

“Certainly, that’s being done in the cardiovascular disease realm, but I think (it may be effectively used as a monitor) for other diseases, such as Alzheimer’s, diabetes and metabolic syndrome,” he said.

Woods said the main question motivating the current research was, “What factors are related to CRP in the elderly?”

“We’ve known that as people age, their CRP levels go up,” Vieira said. “That’s one of the reasons why older individuals are more prone to develop inflammation-related diseases such as diabetes and heart disease. So we just wanted to look at what’s predicting those levels of CRP in an average older population that is relatively healthy.”

Perhaps the most notable result of the study, according to the researchers, relates to heart-rate recovery following exercise.

“The quicker the individuals were able to get back to their resting heart rate after a strenuous exercise test was inversely related to CRP,” Vieira said. “In other words, individuals who had better parasympathetic tone had lower levels of inflammation.”

“And the reason we’re excited about this is that exercise is a great way to improve parasympathetic tone. When you exercise—that is the sympathetic/parasympathetic See INFLAMMATION, Page 2

New particle explains odd behavior in cuprate superconductors

By James E. Kloepel
News Bureau Staff Writer

New fundamental particles aren’t found only at Fermilab and at other particle accelerators. They also can be found hiding in plain pieces of ceramic, scientists at the UI report.

The newly formulated particle is a boson and has a charge of 2e, but does not consist of two electrons, the scientists say. The particle arises from the strong, repulsive interactions between electrons, and provides another piece of the high-temperature superconductivity puzzle.

Twenty-one years ago, superconductivity at high temperatures was discovered in copper-oxide ceramics (cuprates). Existing explanations of superconductivity proved inadequate because, unlike low-temperature superconductors, which are metals, the parent materials from which all high-temperature superconductors arise are insulators.

Now, a new theory suggests something has been overlooked.

“Hidden in the copper-oxide materials is a new particle, a boson with a charge of 2e,” said Philip Phillips, a professor of physics at Illinois.

Surprisingly, this boson is not formed from the elementary excitations—that is, electrons and ions. Instead, the particle emerges as a remnant of the strong interactions between electrons in the normal state.

“High- and low-energy scales are intricately coupled in the cuprates,” Phillips said. “Normally, when you remove a single electron from most systems, one empty state is created. In the cuprates, however, when you remove an electron, you create two empty states—both of which occur at low energy, but paradoxically, one of the states comes from the high-energy scale.”

Experimental evidence of this “one to two” phenomenon was first reported in 1990 and explained phenomenologically by University of Groningen physicist George A. See NEW PARTICLE, Page 2

Fitness and health

Jeffrey A. Woods, professor of kinesiology and community health, and Victoria J. Vieira, a predoctoral fellow in kinesiology and community health, and in nutritional sciences, are co-authors of a new study. Their research may help explain some of the underlying biological mechanisms that take place as a result of regular exercise.

A new book by UI history professor Adrian Burgos chronicles the role of Latinos in America’s favorite pastime. The ballplayers were key in overcoming racial barriers.

A new approach to determine the function of some proteins.

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Experimental evidence of this “one to two” phenomenon was first reported in 1990 and explained phenomenologically by University of Groningen physicist George A. See NEW PARTICLE, Page 2

Racial barriers

A new book by UI history professor Adrian Burgos chronicles the role of Latinos in America’s favorite pastime. The ballplayers were key in overcoming racial barriers.

New protein function

UI researchers are using a new approach to determine the function of some proteins.
Sylvia Manning, UIC chancellor since 1999, announced July 12 that she will retire from UIC at the end of 2007. Manning leaves a legacy of cancer research, amino acid metabolism and enhance ment and of rapid growth in UIC’s aca demic enterprise.

"With a very strong team of deans and other administrators in place and the suc cessful launch of the Brilliant Futures fund raising campaign last month, I felt the time was right to move on," Manning said.

B. Joseph White, president of the UI, said a national search will be launched to choose a successor for Manning, who will retire July 1.

"Sylvia has provided superb leadership to UIC," White said. "Every member of the UIC family — faculty, students, staff, friends and alumni — has benefited from her intellect, integrity, collegiality and passion for this University."

"Sylvia’s legacy is a campus that embodies ideals she has stated so eloquently on many occasions — that UIC offers excellence to all. With her leadership we have access to forward diverse student body," said Lawrence C. Eppley, chair of the UI Board of Trustees. "Both as chancellor and before that as UI vice president for academic affairs, she brought an intense focus on students and student achievements."

Manning was named interim chancellor in September 1999 and permanent chancellor in July 2000, after serving since 1994 as the UI vice president for academic affairs. As vice president, she oversaw development of the state appropriated bud get and coordination of academic affairs university wide; led the creation of the UI Online, the university's program for Web based teaching and learning; and super vised integration of the credit hour. State University, now UIS, into the UI system in 1995.

In addition, more than 24,000 students and 12,000 faculty and staff members and a budget of more than $1.5 billion, UIC is Chi cago's largest university and ranks among the city's top 20 employers. UIC operates 15 colleges, including the nation's largest College of Medicine, with regional health sciences campuses in Peoria, Rockford and Urbana-Champaign, and the state's major public medical center.

And while the study confirms the conclusions of previous research by others such as us age and body composition (bone density and body fat). Blood samples also were drawn to measure CRP levels. And while other studies have explored the relationship between exercise and in flammation, "the unique part of this paper is that we're looking for something that high parasympathetic tone is related to low inflammation," Woods said. "And it's even in dependent of their fitness level," Vieira in terpreted.

"Fitness, fatness and parasympathetic tone appear to be important," Woods said, summing up the findings. "And at least ac cording to this study, high parasympathetic tone might even be more important than those other factors."

Co-authors with Vieira and Woods of the study are UI kinesiology and community health professors Ellen Evans and Edward McAuley, and graduate student Rudy J. Val entine.

Inside Illinois Summer 2007 Publication Schedule

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Contact: Doris Dahl • ddkahil@uic.edu • 333-2895

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

News is solicited from all areas of the campus and should be sent to the editor at least 20 days before publication. Entries for the calendar are due 15 days before publication. All items may be sent to insideillinois@uiuc.edu. The campus mail address is Inside Illinois, 616 E. Green St., Suite D, Champaign, IL 61820. The fax number is 244-0161.

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Melissa Mitchell, applied health sciences, arts, international programs
Mark Reutter, business, law
Diana Yates, life sciences

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Office of Public Affairs
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v 2.0.0
On the Job

Jason Jones

People count on Jason Jones: at work, where he keeps track of spending accounts and inventory, and at home, where he and his wife, Holly, are raising twins, Cadence and Dalton. A native of Paxton, Jones has lived in Buckley for the past five years. In 2001, he graduated from Parkland College in Champaign with an associate’s degree in accounting, the same year that he began working as an accounting technician in the Office of University Payables. After 11 months in that office, Jones transferred to his current job in the department of recreation, sport and tourism.

What are your job responsibilities?

My position is 50 percent time with the department of speech and hearing science and 50 percent time with the department of recreation, sport and tourism. I reconcile all the accounts and the P-cards for both departments. I oversee the reimbursements for RST and will begin doing them for speech and hearing soon. I also do the equipment purchasing and track inventory for RST. And I assist both departments with payroll and human resources issues.

What do you enjoy most about your job?

The people I come in contact with within my department and elsewhere on campus.

What’s the most challenging aspect of your job?

The people. Just making everyone happy. Everyone thinks that their problem is the most important, and sometimes I have to juggle priorities.

What do you enjoy doing away from work?

Golf. The closest course to my home in Buckley is Onarga, but I sometimes come to Champaign, Danville or to Gibson City Railside Golf Club, which is my favorite course because it was the first course I played on that I actually played well. I started playing golf in 1986.

But our 2 1/2 year old twins, Cadence and Dalton, leave very little time for golf right now. They’re constantly busy doing something. I thought it would slow down a little bit once they got a little more independent, but no, it didn’t.

I’m building an oak wet bar for our house right now. It was supposed to be a project that could be done in a couple of weekends, and it’s turned into a yearlong project because we keep thinking of things that we want to add to it: a sink, a granite tile top, a refrigerator, a liquor cabinet, drawers.

When do you expect to have it done?

Well, Holly has given me a deadline of two weeks. She got tired of my being in her stepdad’s workshop next door to work on it.

This is my first woodworking project, and I expect it’s going to snowball from here. We keep thinking of other things that we could build for our house, such as a shelf for my bar glasses, a new fireplace mantle, furniture for the pool-table area.

What got you interested in woodworking?

We bought a new house, and it has a room with a fireplace and pool table in it, and we decided to add a bar. Holly and I went online and started pricing a bar and the costs were outrageous. We mentioned to Holly’s stepdad, Lee, that we wanted a bar and he said we could build one for a fraction of the cost and customize it.

What other hobbies or interests do you have?

I started playing drums in the fifth grade, and when I got to Paxton Buckley-Loda High School, I fell in love with playing in the marching band. In fact, that’s where my daughter’s name, Cadence, came from.

After I graduated from high school, the new band director needed someone to help him teach the fundamentals to the drum line. So, I went in and asked if I could be the drum line instructor. My younger sister, Heidi, was going through high school at that time, so I was her instructor. I did that for six years. Heidi assisted me for two years as instructor, then took over from me and is still doing it. She graduated from the UI in May with a degree in sociology. My parents are really supportive “band parents.” My dad, John Jones, has been an account technician with Facilities and Services Division for more than 20 years, and my mom, Brenda Jones, works for the City of Champaign Parking Division.

Interview by Sharita Forrest

Assistant Editor

A Minute with …

Betsy Hearne

The July 21 release of “Harry Potter and the Deathly Hallows,” the seventh and final book in the Potter series, will reveal what author J.K. Rowling has ultimately done with her boy wonder. While young readers around the world are speculating on Harry’s fate, many experts of children’s literature, including Betsy Hearne, a professor emerita of library and information science at Illinois, are also weighing in on the topic. Hearne’s research interests include literary and artistic analyses of children’s books. She assisted as the director of the Center for Children’s Books at Illinois for 11 years, and as the editor of the Bulletin of the Center for Children’s Books for nine years. She was interviewed by News Bureau Humanities Editor Andrea Lynn.

What is your expectation regarding Harry’s longevity?

As the hero, Harry must live – unless Rowling wants to violate the fairy tale/fantasy mode that she has followed so far.

Would it be ethical for Rowling to kill her beloved protagonist when so many millions of children have grown up with him and, indeed, identify with him?

Death is nothing new to children’s literature, and children certainly can and should be introduced to death in a book before they have to deal with it in real life.

However, the conventions of this series lead to expectations of an ending that may involve loss but, perhaps, will be triumphal for the hero. The death of Albus Dumbledore, the headmaster of the fictional wizarding school, did to some extent prepare children for an even greater loss, but I don’t think it will be Harry.

Has the Potter series changed children’s literature? Do different standards apply to the Potter oeuvre?

Harry Potter has certainly affected publishing history. Although there have been many fantasy series just as good or better – authors Lloyd Alexander, Susan Cooper, Philip Pullman, and of course C.S. Lewis and J.R.R. Tolkien come to mind – this series stands apart on wings of global media attention whose numbers never before achieved by any book series. It has shown that children can read long books if they are motivated to do it, that children’s books can claim adult readers as well, and that it’s still worth taking a risk to develop new writers, which Rowling once did. Unfortunately many grown-ups don’t catch that lucky updraft and will go out of print unknown to young readers.

Have Potter clones begun appearing in children’s literature? Absolutely! The Bulletin of the Center for Children’s Books has seen a major trend of long fantasies, which require more time to review and generate new critical questions. How do you evaluate a series that may be uneven, volume-to-volume? Do you consider each book, year by year, for awards, or do you give an award for the cumulative achievement of the whole series? Once a series is complete, how do you recommend a series that advances in age from a young protagonist to an adolescent when the child may want to read them one right after the other?

Adults are an important bridge between children and books. They can use the Harry Potter forces to strengthen that bridge, to support the kind of motivation and confidence that stimulate literacy, to develop deeper bonds with children by reading and discussing these series, and other books together. It’s a rare and heartening opportunity for all of us.

A Minute with …™ is provided by the UI News Bureau as a venue for Illinois faculty experts in on the topic. Hearne’s research interests include literary and artistic analyses of children’s books. She assisted as the director of the Center for Children’s Books at Illinois for 11 years, and as the editor of the Bulletin of the Center for Children’s Books for nine years. She was interviewed by News Bureau Humanities Editor Andrea Lynn.

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Job picture in Illinois not as bright as elsewhere

By Mark Reutter

News Bureau Staff Writer

Illinois lags behind the nation and neighboring states in job creation; a report by the Institute of Government and Public Affairs at the UI finds.

Between 1996 and 2005, new farm employment in Illinois grew by only 3 percent, below the 4 percent average of six other Midwest states and considerably less than the nearly 12 percent expansion of the U.S. economy.

Not only did Illinois lose a higher proportion of manufacturing jobs than did the U.S. or other Midwest states, but it gained relatively few jobs in the financial sector and shed some jobs in the transportation sector – areas that “Illinois might have been expected to do better than the nation,” Geoffrey J.D. Hewings, an Illinois professor of economics and geography, wrote. Chicago accounted for 92 percent of the net job gains in the state between 1996 and 2005, but the metropolitan area’s growth rate of 4.14 percent underperformed both the national economy and several regional economies in Illinois.

An “issue often raised is that Illinois has the ‘wrong structure’ in terms of the allocation of economic activity by major sectors,” Hewings wrote. “However, it turns out that the state is not as different from other states as it appears to be. There are many similar structures; the problem appears to be that on a sector-by-sector basis, Illinois’ growth rates have been lower than those for the U.S. as a whole.”

No single sector in Illinois, including information, health services, government and education, equaled the employment gains in comparable sectors at the national level.

Illinois did outperform six Midwest states in three areas – construction, professional and business services, and leisure and hospitality. The six states were Indiana, St. Joe’s JOBLINK, Page 5
UI researchers use new approach to predict protein function

By Andrea Lynn
News Bureau Staff Writer

In a paper published online this month in the journal Nature Chemical Biology, researchers report that they have developed a way to determine the function of some of the hundreds of thousands of proteins for which amino acid sequence data are available, but whose structure and function remain unknown.

The research team, led by UI biochemistry professor John A. Gerlt, is the first to use a computational approach to accurately predict a protein’s function from its amino acid sequence. Their “in silico” (computer-aided) predictions were validated in the laboratory by means of enzyme assays and X-ray crystallography.

The new approach involved searching databases of known proteins for those with amino acid sequences that had the greatest homology to the unknown proteins. The researchers then used the three-dimensional structures of the most closely matched known proteins in their analyses of protein function.

Using the structural data obtained from homology modeling, the team performed computerized docking experiments to quickly evaluate whether the unknown proteins were likely to bind to any of a vast library of potential target molecules, or substrates. Determining which substrate binds to a given protein is vital to understanding the protein’s function.

“This study describes an integrated approach using experimental techniques, computational techniques and X-ray crystallography for predicting the function of a protein of previously unknown function,” Gerlt said.

These methods will speed the task of identifying the biological roles of some of the millions of unknown proteins whose functions have not yet been discovered.

“Rather than trying to do (laboratory) experiments on 30,000 compounds to determine if they are substrates, with this approach you might do experiments on 10,” Gerlt said.

The study involved a family of proteins within the large and diverse enolase superfamily. Enolases are enzymes that catalyze the breakdown of glucose and related compounds to make energy for the cell. The research team included scientists from the University of California, San Francisco, and the Albert Einstein College of Medicine.

“This study was supported by the National Institute of General Medical Sciences at the National Institutes of Health,” Gerlt said.

“Notably, the focus on Latinos highlights how integration is a process, and while integration changed the nature of race to negotiate or ameliorate the impact of institutional practices.”

For example, the book presents a new approach to the study of the 60th anniversary of Jackie Robinson’s first integration pioneers has been largely ignored in other discussions of race and ethnicity that focus on Latino participation before and after Robinson when he initiated the dismantling of baseball’s color line. In some cases it was race to negotiate or ameliorate the impact of institutional practices.”

Latino ballplayers were key in overcoming racial barriers

By Diana Yates
News Bureau Staff Writer

Despite the wealth of information available to them, baseball writers, historians and aficionados somehow managed to bench one of the game’s greatest stories.

So says the author of a new book that chronicles the role of Latinos in America’s favorite pastime – their not only played the game, they and African American players worked closely together in the Negro Leagues to break down baseball’s racial divide,” Burgos said. The New York/San Francisco Giants hiring former Negro League team owner Alex Gomez to direct its international operations and wide-opened the Dominican talent pipeline into the Majors, or the Chicago Cubs employing Buck O’Neil as a coach were the exceptions.

The story that I uncovered was much more complicated. It involved flowing identities and team officials who manipulated ideas of race to negotiate or ameliorate the impact of baseball’s color line. In some cases it was for fleeting gains such as being served at a segregated restaurant. Access was the goal in other cases, such as when big league officials presented a player as ‘Cuban’ and not ‘black’ to justify signing the player to a major league contract. In others it was a perception that unfortunately shapes contemporary discussions of race and ethnicity.”

Twelve years passed before each big league team fielded a black player. Burgos noted, “and pioneering players included Martin Pena of Baltimore and Oscar Virgil Sr. who integrated the Chicago White Sox and Detroit Tigers, and that by participating in the Cuban integration pioneers has been largely ignored in the recent spate of books commemorating the 60th anniversary of Jackie Robinson and baseball integration.

“This contributes to the notion that Latinos are merely recent arrivals to baseball – a perception that unfortunately shapes contemporary discussions of race and America’s game, and that often leaves Latinos as an afterthought while shortchanging their history.”

The racial divide.

Burgos is the author of a new book that chronicles the role of Latinos in America’s favorite pastime. “Playing America’s Game: Baseball, Latinos, and the Color Line” is the first historical work on Latinos in baseball that “treats as one story their experience on either side of baseball’s racial divide,” Burgos said.

In “Playing America’s Game: Baseball, Latinos, and the Color Line,” a study of Latin American professional baseball from the 1880s to the present, author Adrian Burgos Jr. traces the racial and ethnic tensions that developed over the incorporation of Latinos in professional baseball.

He shows how Latinos were “central figures in baseball’s racial saga,” and how they and African American players worked closely together in the Negro Leagues to challenge the dictates of baseball’s Jim Crow system and the color line imposed by Major League Baseball.

“To this day, their shared past remains one of the most overlooked chapters in base-"
July 19, 2007

InsideIllinois

achievements

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

Department of Agricultural and Consumer Economics
Earl M. and Mildred S. Hughes Teaching Enhancement Award
Charles Nelson, professor
Nicholas Brozovic, professor

Department of Agricultural and Biological Engineering
J. Kent Mitchell Teaching Excellence Award
Joe Harper, professor

Department of Animal Sciences
G.R. Carlisle Award for Excellence in Extension Teaching
Daniel Jennings, Extension educator

H.H. Mitchell Award for Excellence in Graduate Teaching and Research
Geoffrey Dahl, professor

Department of Crop Sciences
Outstanding Instructor Award by the Field and Furrow Club
Frederick Kolb, professor

Department of Food Science and Human Nutrition
Outstanding Adviser/Mentor
Keith Singletary, professor

Department of Natural Resources and Environmental Sciences
Fellow, American Society of Agronomy
Mark David, professor

business

Department of Accountancy
Award for Excellence in Teaching
Mark Precher, professor of accountancy
W. Brooke Elliott, professor

communications

Department of Advertising
Excellence in Teaching Award
Jason Chambers, professor of advertising

Department of Journalism
Teacher of the Year
Louis Liebovich, professor of journalism

engineering

Department of Agricultural and Biological Engineering
J. Kent Teaching Excellence Award
Joe Harper, professor

Department of Civil and Environmental Engineering
American Society of Civil Engineers Outstanding Instructor Award
Imad Al-Qadi, professor
Larry Fanechostock, professor

Department of Electrical and Computer Engineering
Ronald W. Pratt Faculty Outstanding Teaching Award
Marie-Christine Brunet, lecturer

Department of Industrial and Enterprise Systems Engineering
Gamma Epsilon Excellence in Teaching Award
Dusan Stipanovic, professor

Department of Mechanical Science and Engineering
Five-year Effective Teaching Award
Ty Newell, professor
Two-year Effective Teaching Award
Arne Pearlstein, professor
Dimmitous Kyrtis, professor
Ty Newell, professor

Department of Nuclear, Plasma and Radiological Engineering
The Students’ Award for Excellence in Undergraduate Teaching
Rizwan-Uddin, professor

Department of Physics
Arnold Nordsieck Award for Teaching Excellence 2006
Alfred Hubler, professor

Department of Astronomy
Outstanding Teaching Award
Brian Fields, professor

Department of Chemical and Biomolecular Engineering

School of Chemical Sciences
Teaching Award
Paul Keins, professor

Department of English
Leo B. Kneer Outstanding Teaching Award
Anna Ivy, instructor
Bryce Barou, instructor

Department of History
People’s Choice for Best Lectures in a Survey Course
Mark Leftf, professor
Mark Micale, professor

Department of Political Science
Award for Excellence in Graduate Education Teaching, Mentoring and Service
Brian Gaines, professor
Jude Hays, professor

Department of Psychology
GSO Instructional Award for Excellence in Teaching and Advising at the Graduate Level
R. Chris Fealey, professor

Mabel Kirkpatrick Hohenboken Teaching Enhancement Award
Gary Dell, professor

Pai Chi Excellence in Undergraduate Teaching Award
Renee Baillargeon, Alumni Distinguished Professor

Department of Plant Science
R. Chris Fealey, professor

Department of Geography
Kimberly D. Tomlin, professor

Job Outlook, Continued from Page 3
Iowa, Michigan, Missouri, Ohio and Wisconsin.

Only one Metropolitan Statistical Area (MSA) beat the national employment record. Bloomington-Normal had a net growth of 13,200 jobs between 1996 and 2005, or 17.25 percent.

Bloomington-Normal had a net growth of 13,200 jobs between 1996 and 2005, or 17.25 percent.

It is not clear why the state’s growth rates have lagged behind those in other Midwest states that also have slow employment growth rates.

With both population and the labor force expanding, the inability of the state’s economy to grow jobs presents a major challenge for policymakers,” he concluded.

Hewings’ article is contained in “The Illinois Report 2007,” a group of essays by Illinois scholars on various policy issues, including energy and environment, immigration, health care and elementary and secondary school education.

University Laboratory High School

For the second year, Newsweek has named Uni High one of the nation’s 19 “public elites” as part of its ranking of the top U.S. high schools. Newsweek bases its ranking on a “Challenge Index” devised by education reporter Jay Mathews of The Washington Post. All public schools with an index of at least 1.00 made the list. They are in the top 5 percent of public schools measured this way. Because the index system leaves out many of the nation’s most celebrated public schools, Newsweek last year added the category of “public elites.”

University Library

Several titles were incorrect in the following listing in the July 5 issue of “Inside Illinois.” The corrected version:

Five-YU librarians were honored in May at the Lavender Graduation and LGBT Awards Ceremony sponsored by the Office for LGBT Resources. The event recognized those who promote an LGBT-friendly environment on campus.

Honored with a group award: Betsy Kruger, head of circulation and professor of library administration; John Littlewood, retired government documents librarian, “gay literature” bibliographer and professor emeritus; Nancy Romere, rare book and special collections cataloger and professor emeritus; Beth Stafford, retired head librarian for the women and gender resources library and professor emeritus. The award was created especially for them to recognize their efforts in building, maintaining, promoting and disseminating the resources of the library’s LGBT collection.

job market

Academic Human Resources
Suite 420, 807 S. Wright St. • MC-320
333-6747
Listings of academic professional and faculty member positions can be reviewed during business hours or online.

For faculty/teaching positions: www.ahr.illinois.edu/job/jobs/itbpboard.htm
For career opportunities: https://trace.ahr.illinois.edu/pandl/cf/application/SearchForm.cfm

Staff Human Resources
21 E. Gregory Drive, MC-562
333-3201
Information about staff employment online: www.pes.illinois.edu

Paper employment applications or paper civil service exam requests are no longer accepted by SHR. To complete an online employment application and to submit an exam request, visit the online Employment Center:
https://trace.ahr.illinois.edu/pandl/cf/application/employment/index.cfm
**brief notes**

Grad students exhibit art in Chicago

Work by UI art and design graduate students is on view through Aug. 11 in I Space, the Chicago gallery of the UI's Urbana campus.

The exhibition titled "Dookie" features work by Master of Fine Arts degree candidates Jennifer Astwood, Nisa Blackmon, Bryan Collier, Aaron Dugger, Rashelle Roos, Gary Schott, Rick Valentin and Angela Waarala.

Organized by UI art and design professor Deke Weaver, the exhibition site refers to excess of all kinds present in our culture.

According to Weaver, the student art assembled ranges from Roos’ “golden monsterouslies” and Astwood’s “holy molten kitsch(y)” plates (in both cases, sculpture) to Waarala’s “splanking expedition through the bowels of the human psyche” (video).

I Space gallery hours are Tuesday through Saturday, 11 a.m. to 5 p.m. The gallery is at 230 W. Superior St., Chicago.

UI Assembly Hall

Broadway series shows announced

This year’s News-Gazette Broadway Series includes Broadway’s biggest and brightest touring productions.

This year’s series includes "Gypsy," Sept. 20; "Annie," Oct. 8; "Hairspray," Nov. 29; "The Producers," March 29; and "Evita," April 23.

As an added benefit, series subscriber tickets will have an advance chance to purchase tickets to “The Blue Man Group” before they go on sale to the general public. “The Blue Man Group” will perform its new show, “How To Be A Megastar Tour 2.1 Live,” at 8 p.m. Oct. 13. Current News-Gazette Broadway Series subscribers have until July 20 to renew their same seats. Orders from persons interested in becoming a News-Gazette Broadway Series subscriber will be accepted starting July 25. There is no deadline to become a new series subscriber. Series tickets may be ordered through the first performance. Tickets for the individual shows in the News-Gazette Broadway Series will go on sale Aug. 24. Additional information may be obtained by going to www.uiassemblyhall.com or contact the box office at 333-5000 for a brochure.

CITES software WebStore

MATLAB now available for free

MATLAB, a high-level language and interactive environment that enables the user to perform computationally intensive tasks faster than with traditional programming languages such as C, C++ and Fortran, is now available for free from Campus Information Technologies and Educational Services’ software WebStore at http://webstore.uiuc.edu. Thanks to a coalition of 14 department contributors, MATLAB and the 18 toolboxes are available to all UI campus users at no cost.

Previously, network access to MATLAB was available on WebStore for $20 and the standalone version for $50. Department contributors have agreed to increase their annual contributions, which eliminates the distribution cost for network access to MATLAB and reduces the standalone version to $25 per license.

In addition to MATLAB, faculty and staff members may browse more than 100 other software titles available on WebStore. E-mail questions to webstore@uiuc.edu.

Semiconductor membrane mimics biological behavior of ion channels

**By James E. Kleepepp**

News Bureau Staff Writer

A semiconductor membrane designed by UI researchers could offer more flexibility and better electrical performance than biological membranes. Built from thin silicon layers doped with different impurities, the solid-state membrane could also be used in applications as single-molecule detection, protein filtering and DNA sequencing.

"By creating nanosipes in the membrane, we can use the membrane to separate charged species or regulate the flow of charged molecules and ions, thereby mimicking the operation of biological ion channels," said lead researcher Jean-Pierre Leburton, the Stillman Professor of Electrical and Computer Engineering at Illinois.

Leburton, with postdoctoral research associate Maria Gracheva and graduate student Julien Vidal, simulated the operation of the semiconductor membrane at a number of electrostatic potentials. They report their findings in a paper accepted for publication in the journal Nano Letters, and posted on the journal’s Web site.

In the researchers’ model, the nanosipe-membrane structure is made of two layers of silicon, each 12 nanometers thick, with opposite (n- and p-) doping. The electrostatic potential is positive on the n-side and negative on the p-side of the membrane.

The nanosipe has an hourglass shape, with a neck 1 nanometer in diameter and openings on each side of the membrane 6 nanometers in diameter. The “size” of the nanosipe can be changed by changing the electrostatic potential around it.

By controlling the flow of ions, the artificial nanopore offers a degree of tunability not found in biological ion channels, said Leburton, who also is a researcher at the university’s Beckman Institute, the Coordinated Research Laboratory, and the Micro and Nanotechnology Laboratory.

In addition to serving as a substitute for biological ion channels, the solid-state nanopore and membrane could be used in other applications, including sequencing DNA. "Using semiconductor technology to sequence the DNA molecule would save time and money," Leburton said. "By biasing the voltage across the membrane, we could pull DNA through the nanopore. Since each base pair carries a different electrical charge, we could use the membrane as a p-n junction to detect the changing electrical signal."

Funding was provided by the National Science Foundation and the National Institutes of Health.

Radio documentary takes listeners beyond the Great Wall

T
en UI journalism students in Nancy Benson’s international reporting class will take listeners inside China with a two-hour documentary, “China: Beyond the Great Wall,” to be broadcast at 5 p.m. July 28 on WILL-AM (580).

The students climbed the Great Wall, walked along Shanghai’s Bund and visited the Forbidden City. But the students’ primary mission in China was gathering information for radio stories on how the Chinese economy and culture reach beyond the Great Wall, to be broadcast at 5 p.m. July 28 on WILL-AM (580).

The students went beyond tourist spots to report stories that took an unvarnished look at the country that is preparing to host the Olympics in 2008. The student journalists adapted well to reporting in a country where they didn’t speak the language and transportation was a challenge. "These students had a lot of previous experience, although this was the first shot at foreign reporting for most of them," he said.

Benson, a professor and a veteran of foreign reporting assignments, said the students were surprised to get as much cooperation as they did from all levels of society. "We didn’t think we would be able to get much official comment from the government," she said.

Several students were able to interview government officials on subjects such as air pollution and environmental problems. Language was the most difficult barrier for the students.

International reporting student Jed Land interviews a worker in Drickson for a report he prepared on waste from computer and electronic devices.

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23 Monday  
“Back to the Early Universe: The Relativistic Heavy Ion Colliders as a Time Machine.”  
Matthew Gross-Pedekamp, UI. 12:15 p.m. 144 Loomis Physics.

24 Tuesday  
“Hydrogenase Models and Studies Based on Iso-  
propyl Chlorate Compounds.”  
Philip L. Wolters, UI. 1 p.m. B102 Chemical and Life Sciences Flavor.

25 Wednesday  
“Weird Craziness: Ridicu-  
lously Classical Approaches to Syncrotron Radiation and Other Stuff.”  
George Collins, UI. 12:15 p.m. 144 Loomis Lab of Physics.

26 Thursday  
“Small Molecule Rhodium Carbonyl Complexes: Model Integrated Design Techni-  
tum Estrogen Receptor Ligands for Tumor Imaging.”  
Nathan C. Ackroyd, UI. 9:30 a.m. 433 Roger Adams Labora-  	ty. Organic Chemistry.

27 Friday  
“Neurotics and Supernovas: A Physicalist Does Cosmology.”  
Jon Thaler, UI. 12:15 p.m. 144 Loomis Lab Physics.

28 Saturday  
29 Sunday  
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Much of this information is drawn from the online Campus Calendars on the UI Web site at 
www.uiuc.edu/uicalendar. Other calendar entries should be sent 15 days before the desired publication date to insid@uiuc.edu.  
More information is available from Marty Yeakel at 333-1085.  

July 19 to Aug. 5  

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Note: $ indicates Admission Charge  

CALENDAR  

of events  

colloquia  
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27 Friday  
“The Lion in Winter.”  
William Martin, director, 7 p.m. Studio Theater, Krannert Center. Classic comedy/drama by James Goldman about the family of Henry II and his estranged wife, Queen Eleanor.  
$ Summer Studio Theater Company.

28 Saturday  
Peter Reynolds, director, 7:30 p.m. Studio Theater, Krannert Center. Strong language.  
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“Bus Stop.”  
Peter Reynolds, director, 7 p.m. Studio Theater, Krannert Center. Summer  
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Peter Reynolds, UI. 1 p.m. B102 Chemical and Life Sciences Flavor.  
$ Summer Studio Theater Company.

31 Tuesday  
“Why Knot”  
Peter Reynolds, UI. 5 p.m. Beckman Institute Café.  
$ Summer Studio Theater Company.

25 Wednesday  
“Pasta, aka The Carmone Brothers Italian Food Products Corp.’s Annual Pasta Pageant.”  
Sue Lawless, director, 7:30 p.m. Studio Theater, Krannert Center. Strong language.  
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UI architecture graduate named Luce Scholar

By Melissa Mitchell

News Bureau Staff Writer

Ryan Dick, a recent master’s degree recipient in the UI School of Architecture from Elmhurst, Ill., is among 18 students nationwide to be named to the Luce Scholars Program for a yearlong experience in Asia. The Luce Scholars Program, an initiative of the Henry Luce Foundation, provides full stipends and internships for the recipients to live and work in Asia. The program was begun in 1974 to increase awareness of Asia among future leaders in American society. Students may be nominated from a select group of 67 colleges and universities, including the UI. Nominations are based on a candidate’s record of high achievement, outstanding leadership ability, and a clearly defined career interest with evidence of potential for professional accomplishment. Applicants must have had significant prior experience with Asia.

After consulting with Dick, the Luce Foundation has placed him at Tongji University in Shanghai, China. He will spend the upcoming academic year working with the university’s College of Architecture and Urban Planning, the largest architectural teaching program in China. Dick will co-teach classes for freshmen and sophomores teaching program in China. Dick will receive intensive training in Mandarin. In addition, the Luce Scholars Program to expand the number of tutors at Urbana Middle School and assisting at a crisis nursery center. He also runs in marathons.

After completing the Luce Scholars Program, Dick plans to join a multidisciplinary firm, where he hopes to be able to work on projects on a scale that can influence change worldwide.

“We are thankful to have Ryan Dick representing the university in the Luce Scholars Program,” said David Schug, who is in charge of the UI Office of Scholarships for International Study. “It had been 10 years since an Illinois-nominated scholar received this prestigious award, which is a testament to Ryan’s exceptional personal and scholarly qualities.”

Schug said the office is recruiting applicants for 2008-09 awards from among current Illinois students and recent alumni. The application deadline is Oct. 29.

For more information, contact Schug at 217-244-0254 or dschug@uiuc.edu.