Study: Not all treated equally in TV coverage of steroid use

By Craig Chamberlain
Social Sciences Editor

Retired baseball stars Barry Bonds, Mark McGwire and Rafael Palmeiro each had Hall of Fame-worthy numbers, each hitting more than 500 home runs. All three also were tarred by allegations of steroid use.

Their stories, however, received very different treatment over 12 years of national television news coverage, says U. of I. professor Brian Quick, lead author on a paper about that coverage and its effects, published online Nov. 20 by the journal Communication Research.

“We found that Bonds received more than twice as many negative stories as his alleged use as McGwire, and almost four times as many as Palmeiro,” said Quick, a professor of communication and in the College of Medicine. Those stories numbered 544 for Bonds, 252 for McGwire and 137 for Palmeiro.

Researchers also found that the news coverage on Bonds, compared with that on either McGwire or Palmeiro, was much more likely to focus on steroid use and gains to gain a competitive edge rather than for rehabilitation from injury. Those references ran 131 to five for Bonds, versus 195 that mentioned health effects.

The data is based on an analysis of 1,247 news transcripts from 2000 to 2011 from seven national networks — ABC, CBS, CNBC, CNN, FOX, MSNBC and NBC — obtained through LexisNexis.

Co-authors of the paper were Natalie Lambert and Chris Josey, both doctoral students in communication at Illinois.

Despite the bad press, and to the researchers’ surprise, baseball fans surveyed online in 2011 for a separate study also included in the paper were much more supportive of Bonds being elected to baseball’s Hall of Fame, over either McGwire or Palmeiro, Quick said.

“Despite the negative attention Bonds received in the news, and survey participants perceiving him as not very likeable compared to the other two, these fans had a more favorable attitude toward his election,” Quick said.

The survey included 325 participants from 42 states, all of them users of either ESPN’s Major League Baseball team forums or Google Groups baseball forum.

Bonds is African-American, McGwire is white and Palmeiro is Latino. Quick said the findings on television news coverage are not surprising in light of previous research on the way these racial and ethnic groups have been portrayed by sportscasters and the nonSports news media.

According to that research, sportscasters have frequently characterized black athletes as superior athletes with an inspiring background of overcoming hardship as a child, Quick said. White athletes are more often described as hardworking, intelligent and exceptional leaders. And Latinos are seriously underrepresented in media over all, and often depicted in limited or marginal roles.

Bonds, the son of a Major League Baseball star, did not have the up-from-hardship storyline working for him, Quick said. He also was not well-liked by the sports media.

“He becomes the perfect villain, ultimate bad guy,” Quick said.

Another key finding from the news transcript analysis, consistent with his own previous research, Quick said, was that damage to players’ reputations from steroid use was cited much more often than the potential negative health effects. Reputation damage was cited in 984 of the 1,247 news stories, versus 195 that mentioned health effects.

As a specialist in health communication, Quick said he finds that concerning. “The underlying message to kids is that steroid use is OK, as long as you don’t get caught,” he said. ♦

May Berenbaum awarded the National Medal of Science

By Diana Yates
Life Sciences Editor

U. of I. entomology professor and department head May Berenbaum received the National Medal of Science in a White House ceremony Nov. 20. She was one of 10 recipients of the medal, which honors American scientists “for achievement and leadership in advancing the fields of science and technology,” the White House press office announced.

As she received her medal in the East Room of the White House, Berenbaum was honored “for pioneering studies on chemical communication and the genetic basis of insect/plant interactions, and for enthusiastic commitment to public engagement that inspires others about the wonders of science.”

Berenbaum, a Swainland Chair, joined the U. of I. faculty in 1980. In addition to her ongoing research on the chemical interactions between plants and insects, she is a nationally recognized authority on insects in general, with a recent focus on threats to insect pollinators and pollinator health. She chaired a committee of the National Academy of Sciences on the status of pollinators in North America, and emerged as a spokesperson for the scientific community on declines in honey bee populations around the world.

Berenbaum has written several books on insect fact and folklore, using wit and her own fascination with insect habits to engage readers. She also founded the Insect Fear Film Festival, an annual event on the Urbana campus that addresses insect-related fear and loathing and the film industry’s penchant for casting insects as villains.

Berenbaum has been honored many times for her contributions to science and to the public understanding of science. She is a fellow of the American Association for the Advancement of Science, an elected member of the National Academy of Sciences, a fellow of the American Academy of Arts and Sciences, a fellow of the Entomological Society of America, an honorary fellow of the Royal Entomological Society, and a recipient of the Tyler Prize for Environmental Achievement (2011).

ON THE WEB

www.nsf.gov/od/rms/medal.jsp

National honor
Entomology professor May Berenbaum received the National Medal of Science award from President Obama at a White House ceremony Nov. 20. Berenbaum graduated summa cum laude in biology from Yale University in 1975. She earned a doctorate in ecology from Cornell University in 1980 and joined the U. of I. entomology department that year. She became department head in 1992. ♦
SEC holds governance resolution for February meeting

By Mike Holenthal
Assistant Editor

A resolution that supporters say is designed to help mend faculty division over the administration’s handling of the employment of Steven Salaita will be presented for consideration of the Urbana-Champaign Senate at its Feb. 9 meeting.

In a 7-5 vote, the Senate Executive Committee denied a request to include the resolution on the Dec. 9 agenda, a majority recommending that two senate committees tasked with studying the Salaita case be allowed to conclude their deliberations before the final vote.

“When we speak, we should have the complete range of information and background,” said a professor of library science, who was among the leaders of an unofficial joint ad hoc committee.

The move was made after Mary Mallory, a chemistry professor and the lead sponsor of the resolution, said that without allowing a separate vote, the resolution would not identify the specific issues.

“Some people are invited and certain people are being told to shut up,” she said.

She added that the resolution was meant to bring people together. She said not allowing a separate vote would allow the campus’s already existing unease to be perpetuated.

“I think we need to respect the will and knowledge of the senate,” she said. “I think we need to respect the will and knowledge of the senate.”

The resolution itself describes the ad hoc committee’s efforts as “compartmentalized” facility in the door to the SEC to expedite the process of altering its standing rules.

She said students currently were reviewing the systematic process for further deliberation.

Other business

Senate leaders agreed to provide a report of any senate-related meetings with administrators, including notes on who was present and what was discussed.

The move was made after Mary Mallory, a professor of library science, said leaders were not notified of the violation of the Illinois Open Meetings Act.

“Certain people are invited and certain people are not,” she said.

The OMA sets a threshold for how many members of an elected board may meet without officially calling a meeting. For the SEC, that number is five.

Campus committee to review classified research policy

By Mike Holenthal
Assistant Editor

A campus-level ad hoc committee will be formed to study a proposal from the Office of the Vice President for Research to expand classified research policies on all three campuses.

The OVP effort is designed to help form a university-wide committee allowing lower-level projects and more research funding from the U.S. departments of defense and energy.

“Many of us think the university must begin to more aggressively compete with universities that are known entities and heavily funded by the federal government,” said a professor of library science, who read a letter written by Jorge Villegas, the chair of the University Senate’s Conference, which was distributed at the Dec. 1 SEC meeting.

Villegas said the university already has established a federal facility security clearance for all three campuses, though work in Urbana likely would be limited to an approved “compartmentalized facility” in the Research Park.

The designation allows the university to fund that was previously unavailable to the university and the principle of campus governance,” said a professor of library science.

The draft policy reads: “The University of Illinois (U of I) has the authority to establish policies and procedures necessary to regulate and manage access to information handled by the U of I. This policy is intended to express our united voice in honoring the bedrock principles of shared governance and academic freedom that we all cherish.”

The resolution itself describes the administration’s actions in the Salaita case as “inconsistent with the principles of shared governance and academic freedom that are cherished by our campus and enshrined in our statutes.”

The draft calls for “enabling conditions” if such a case should arise in the future.

Joyce Tollefson, a professor of Spanish, said the introduction to the resolution, which recalls the background and details the fallout of the Salaita case, is opinion and not altogether factual.

The resolution also asks for the SEC and provost’s office to support the resolution by pushing to the senate for action.

“It’s been a long time that they’ve been angry (about the Salaita case),” he said. “It’s a division that can be quite entrenched if it’s not addressed.”

Calvin Lear, a graduate student and SEC member, said the decision to hold back the resolution would further encourage the perception in certain circles of campus that the SEC is incapable of addressing serious problems.

“I’m worried about the message we send by postponing,” he said. “I think we need to respect the will and authority of the senate,” said Abbas Ammons, a professor of architecture. “If we delay things … it may reinforce that perception.”

Bubules offered to meet with the ad hoc committee after the decision was made to review this resolution and wording and how it could more fully reflect the views of the broader campus.

The move was made after Mary Mallory, a chemistry professor and the lead sponsor of the resolution, said that without allowing a separate vote, the resolution would not identify the specific issues.

She added that the resolution was meant to bring people together. She said not allowing a separate vote would allow the campus’s already existing unease to be perpetuated.

“I don’t think it has to be very complicated,” she said, adding the campus’s existing policy on classified research was written in 1967.

Roy Campbell, SEC chair and a professor of computer science, said any policy review must include project-granting and oversight responsibilities, and whether campus educational goals are being satisfied in non-classified work.

“We were asked to consider this proper,” he said. “There are a variety of unkind interpretations.”

William Maher, the university archivist and a professor of library administration, said the committee would need to identify campus policy, clarify issues and decide whether conflicts or should be updated. The committee would then make its recommendations to the SEC for further deliberation.

Iliesiu Adesida, the provost and vice chancellor for academic affairs, said the additional research opportunities would be an important component of the university’s mission, though projects would likely be narrowly focused and not student intensive.

“I don’t see students participating too much in this research,” he said. “It’s very specialized.”

Joyce Tollefson, a professor of Spanish, said the committee would be valuable in identifying all of those issues.

“The U of I. Flash Index shows steady economic growth

By the editor

The U. of I. Flash Index rose slightly to 106.6 in November from its 106.5 level in October. The index has remained in the 106-107 range since February.

While the Illinois economy has re- mained relatively steady, other mea- sures of economic activity have shown dramatic improvement,” said J. Fred Gieritz, who compiles the index for the U. of I. Institute of Government and Public Affairs. Although the index has not moved much over the past few months, it has stayed above 100, the dividing line between economic growth and de-cline. “This period of steady growth has finally begun to register in areas such as employment,” Gieritz said.

The Illinois unemployment rate has fallen in the last year from 9.1 percent to 6.6 percent. While the Illinois rate is still higher than the national rate, it is far less than one percentage point above the national level. This is an improve- ment compared to a two-point differ- ence a year ago.

The index is a weighted average of Illinois growth rates in corporate earn- ings, consumer spending and personal income. Tax receipts from corporate in- come, personal income and retail sales are adjusted for inflation before growth rates are calculated. The growth rate for each component was then calculated for the 12-month period using data through Nov. 30.
The 2014 Guide Book to Gift Books, published by the Office of Technology Management and edited by Jacqueline Woodson, for middle readers, as a book that older teens can relate to.

“The Glass Sentence,” by Jennifer Longo. A tired, but still hopeful girl enters a new world of Greyville, Illinois, has a vegetable garden that her father also worked at. She has a trove of recipes that she’s modified to include venison.

“Six Feet Over It,” by Jennifer Longo. Two picture books that Quealy-Gainer described as “delightful.”

“The Life and Times of Benny Alvarez,” by Peter Johnson. A seventh-grade boy must deal with the challenges of middle school and home life.

Gift guide helps holiday shoppers choose books for children.
NEW faces 2014

Among the newcomers to the Urbana campus are faculty members whose appointments began this summer or fall. Inside Illinois continues its tradition of introducing some of the new faculty members on campus and will feature at least two new colleagues in each fall issue.

Jacqueline C. Hitchon
professor and head of the Charles H. Sandage Department of Advertising, College of Media

Education: Ph.D. (marketing), M.B.A., University of Wisconsin at Madison; M.A., B.A. (modern languages and literature), Oxford University, England
Courses teaching: In spring 2015, she will teach a doctoral seminar offered by the Institute for Communications Research. MOA 572, Promotion II. (The doctoral degree in the College of Media is offered by the institute rather than by individual departments within the college.) The seminar is designed to expose doctoral students to a broad range of media-related research.
Research interests: Her research interests focus on how audience members psychologically process advertising when there is an “A is B” equation. This can occur, for example, when the ad contains a metaphor, when a political candidate turns out to be female rather than male, when a model is digitally edited to be thinner than he or she is in reality, or when the plot of a movie or program is not an authentic storyline but rather orchestrated around the placement of a brand or public relations message. “Dr. Hitchon is an exceptional scholar and has extensive administrative experience,” said Jan Slater, the dean of the College of Media. “She will be a tremendous addition to the department, the college and to campus.”

Why Illinois: “It’s very important to me to be part of a world-class university at the forefront of my discipline,” Hitchon said. “U. of I. has been visionary in establishing a College of Media, and the Charles H. Sandage Department of Advertising remains the inaugural department of its kind with an unwavering commitment to perpetual leadership of the field.”

Citlali López-Ortiz
assistant professor of kinesiology and community health in the College of Applied Health Sciences

Education: Ph.D. (kinesiology), University of Wisconsin at Madison; M.A. (dance), State University of New York at Brockport; B.S. (physio), National Autonomous University of Mexico
Courses teaching: KIN 257, Coordination, Control and Skill
Research interests: The scientific basis for dance as therapy for rehabilitation of movement disorders and enhancement of movement learning. Her work focuses on typically and atypically developing children, cerebral palsy and Parkinson’s disease. “As a research assistant professor in the department of physical medicine and rehabilitation in Northwestern University’s Feinberg School of Medicine and a research scientist in the Rehabilitation Institute of Chicago, Dr. López-Ortiz developed the scientific basis for dance as therapy for rehabilitation of movement disorders and enhancement of movement learning,” said Tanya Gallagher, the dean of the College of Applied Health Sciences. “Her research in the laboratory is complemented by teaching ballet to children with cerebral palsy and adults with Parkinson’s disease. Dr. López-Ortiz is a strong match in the laboratory is complemented by teaching ballet to children with cerebral palsy and adults with Parkinson’s disease. Dr. López-Ortiz is a strong match for the high quality of its resources for teaching and research,” López-Ortiz said. “I enjoy very much teaching in a state-funded university that enrolls excellent students from all walks of life. My research involves basic and applied science questions as well as interdisciplinary collaborations. I was looking for a university with a first-class human and technology infrastructure in a variety of disciplines: neuroscience, engineering and computer sciences, the arts, and applied health sciences. Illinois offered all of these with an open, supportive and vibrant environment for innovation. I am truly delighted to be part of this community.”

George R. Gilmore, 85, died Nov. 27 at Helia Healthcare Center, Champaign. He was a truck driver at the U. of I. for 32 years, then became an automotive sub-foreman for University Housing in 1981. He retired in 1984. Memorials: Bondville United Methodist Church.
Olen M. Mackey, 98, died Nov. 14 at Eastside Medical Center, Tuckers, Georgia. Mackey worked at the U. of I. for 31 years, retiring in 1980 as an animal caretaker for physiology and biophysics. Memorials: White Oak Baptist Church, 1352 Martin Nash Road, Libburn, GA 30047.
Frances E. Merrifield, 87, died Nov. 20 at his Champaign home. Merrifield worked at the U. of I. for 27 years, retiring in 1990 as an electronics assistant for computer science. Memorials: Windsor Road Christian Church, www.windsorroad.org; or Community Elements, communityelements.org.
William K. Smith Sr., 92, died Nov. 24 at Heritage Health Therapy and Senior Care, Gibson City. He worked at the U. of I. as a plumber for the Division of Operation and Maintenance, retiring in 1984 after 31 years of service.
Anna Lee Thompson, 84, died Nov. 12 at Carle Foundation Hospital, Urbana. Thompson worked at the U. of I. for more than 30 years, retiring in 1991 as the assistant to the head of the department of civil engineering.
Ads removed for online version
The U. of I. will soon join a short list of universities worldwide that have an operating fusion device. Earlier this year, the Max Planck Institute for Plasma Physics in Germany, arrived on several flatbed trailers last week after a long trans-Atlantic ride on a ship. Once it is reassembled, Illinois will join a short list of universities worldwide that have an operating fusion device on its campus.

"Computer resources such as Blue Waters have attracted top computational scientists," Ruzic said. "The new models they create need to be benchmarked with experimental data. Since our device can run steady state, the amount of data we can generate is enormous. Such a data set could be of great use in verifying and aiding in the creation of new computational paradigms that could eventually transform society." Ruzic estimates that it would cost up to $20 million to build HIDRA from scratch.

A group of Illinois researchers in summer 2013 learned that the Max Planck Institute in Greifswald, Germany, had completed its WEGA experiments and was interested in giving away the equipment. Besides the sheer size of the machine, the disassembly, shipping and rebuilding involves many technical challenges. An European toroidal reactor had never been moved to the United States before; all of its major power components are rated for EU standards and must be adapted to operate in the U.S. electrical network.

The technical details were resolved by January 2014, and Ruzic traveled to Germany with NPPE colleagues Jean Paul Alaim and Davide Curreli to finalize the deal. Ruzic’s former postdoctoral research associate, Daniel Andruczyk, who had worked on the WEGA machine prior to coming to Illinois, was hired as a research professor to run the machine.

In September, researchers and students from CPMI spent a month in Greifswald disassembling and readying the HIDRA for shipping. Rebuilding began immediately upon arrival, and operations are expected to begin by the middle of next year.

In addition to enabling research, HIDRA is an exceptional teaching tool. Students will learn as they help rebuild the device. Andruczyk will begin teaching courses in fusion device operations as early as spring.

"I will be teaching a class in the design and operations of fusion devices," Andruczyk said. "It’s all well and good to know the plasma equations and know the theory, but learning what goes into designing, building and testing such a device is extremely important, and as far as I know, there is no nois Device for Research and Applications, or HIDRA, will make NPRE one of a handful of U.S. nuclear departments offering such a significant facility for plasma/fusion research.

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Six Illinois faculty members elected 2014 AAAS fellows

By Liz Ahlberg
Physical Sciences Editor

Six U. of I. faculty members have been elected 2014 fellows of the American Association for the Advancement of Science: Placid M. Ferreira, Brendan A. Harley, Joseph W. Lyding, Phillip A. Newmark, Dan Roth and William H. Sanders.

The Illinois researchers are among the 401 new fellows chosen for their efforts to advance science applications that are deemed scientifically or socially distinguished. The new fellows will be honored at a banquet at the AAAS annual meeting in February.

“These are extraordinary faculty members who are making great contributions in their fields, innovators and educators who are committed to addressing the grand challenges of our society. They are prime examples of the scholarship, ingenuity and quality teaching that are Illinois hallmarks,” said Ilesanmi Adesida, the vice chancellor for academic affairs and provost of the Urbana campus.

Ferreira, the Tunghao Julia Lu professor and head of mechanical science and engineering, was recognized for his work in manufacturing research, including precision engineering and machine tools, nano-scale manufacturing and flexible automation, and for excellence in leadership.

Ferreira earned his Ph.D. from Purdue University in 1987 and joined the faculty at Illinois the same year. He is a fellow of the American Society of Mechanical Engineers and the Society of Manufacturing Engineers. He is affiliated with the Micro and Nanotechnology Laboratory at Illinois.

Ferreira, a professor of chemical and biomolecular engineering, was elected for outstanding contributions to the fields of biomaterials and tissue engineering. Harley’s research focuses on developing advanced biomaterials that replicate the architecture of spatially varying environments found in the body. He and his group are creating biomaterials to regenerate musculoskeletal tissues after injury and to study the onset, growth and treatment of diseases such as cancer.

Harley earned his Sc.D. from the Massachusetts Institute of Technology in 2006 and joined the Illinois faculty in 2008. He is a core faculty member at the Institute for Genomic Biology and is affiliated with the departments of bioengineering and of materials science and engineering, and the Micro and Nanotechnology Laboratory at Illinois.

Lyding, a professor of electrical and computer engineering, was honored for distinguished contributions in nanotechnology and discovery of the giant deuterium isotope effect. He developed scanning tunneling microscopy (STM) hardware and techniques that are used in labs around the world to study materials and devices at the atomic scale, and he also discovered that deuterium could be used to extend the life of computer chips.

Lyding earned his Ph.D. from Northwestern University in 1983 and joined the Illinois faculty in 1984. He is a fellow of the American Physical Society, the American Vacuum Society and IEEE, and has received numerous awards and honors for his contributions to STM and nanotechnology.

Newmark received his Ph.D. in 1994 from the University of Colorado at Boulder and joined the Illinois faculty in 2001. He is a Howard Hughes Medical Institute investigator, and the recipient of a CAREER Award from the National Science Foundation, a Damon Runyon Scholar Award winner from the Damon Runyon Cancer Research Foundation, and has been named a University Scholar.

Roth earned his Ph.D. from Harvard University in 1995 and joined the faculty at Illinois in 1997. He is a fellow of the Association for the Advancement of Artificial Intelligence, the Association for Computational Linguistics and the Association for Computing Machinery, and received an NSF CAREER award. He also is affiliated with the Beckman Institute at Illinois.

Sander, the Donald Biggar Willott professor and head of electrical and computer engineering, was cited for the development of fundamental theory and practical techniques to ensure that societal-scale distributed computing systems are trustworthy. He was the founding director of the Information Trust Institute at Illinois, which provides national leadership in trustworthy and secure information systems. He directs the Department of Energy/Department of Homeland Security Trustworthy Cyber Infrastructure for the Power Grid center, which aims to make the U.S. power grid secure and resilient.

Sanders earned his Ph.D. from the University of Michigan in 1988 and joined the Illinois faculty in 1994. Sanders also is a fellow of IEEE and the Association for Computing Machinery. He is affiliated with the Coordinated Science Laboratory at Illinois, where he served as director from 2007 until 2014 when he became head of the electrical and computer engineering department.

The American Association for the Advancement of Science, the world’s largest general scientific society, was founded in 1848. Fellows are chosen for their outstanding contributions to the field, a tradition since 1874.
Teens who mature early at greater risk of depression, study says

By Shailta Forrest
Education Editor

Youth who enter puberty ahead of their peers are at heightened risk of depression, although the disease develops differently in girls than in boys, a new study suggests.

Early maturation triggers an array of psychological, social-behavioral and interpersonal difficulties that predict elevated levels of depression in boys and girls several years later, according to research led by psychology professor Karen D. Rudolph at the University of Illinois.

Rudolph and her colleagues measured pubertal timing and tracked levels of depression among more than 160 youth over a four-year period. During their early teenage years, the youth in the study completed annual questionnaires and interviews that assessed their psychological risk factors, interpersonal stressors and coping behaviors. Parents also reported on their children’s social relationships and difficulties.

Published online by the journal Development and Psychopathology, the study is one of the first research projects to confirm that early puberty heightens risk for depression among more than 160 youth over a four-year period. During their early teenage years, the youth in the study completed annual questionnaires and interviews that assessed their psychological risk factors, interpersonal stressors and coping behaviors. Parents also reported on their children’s social relationships and difficulties.

“It is often believed that going through puberty earlier than peers only contributes to depression in girls, but the timing is different than in girls,” Rudolph said. “Pubertal changes cause early maturing girls to feel badly about themselves, cope less effectively with social problems, affiliate with deviant peers, enter riskier and more stressful social contexts, and experience disruption and conflict within their relationships.”

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Early maturation did not appear to have these immediate adverse effects on boys, who showed significantly lower levels of depression at the outset than their female counterparts. However, these differences dissipated over time, such that by the end of the fourth year, early maturing boys didn’t differ significantly from their female counterparts in their levels of depression.

“While early maturation seemed to protect boys from the challenges of puberty initially, boys experienced an emerging cascade of personal and contextual risks – negative self-image, anxiety, social problems and interpersonal stress – that eventuated in depression as they moved through adolescence,” Rudolph said.

Although the study examined the risk factors as independent measures, it’s possible that these elements mutually reinforce each other over time, the researchers said.

“But it’s important to note, as we find in our work, that only some teens are vulnerable to the effects of early maturation, particularly those who experience more disruption in their families and less support in their peer relationships,” Rudolph said.

Psychology professors Sharon F. Lambert of George Washington University, Maki N. Nasuaka of University of California, Riverside; and Wendy Troop-Gordon of North Dakota State University were co-authors on the study.

GIFT GUIDE, From Page 3
Yang, the story of an Asian-American superhero from the 1940s golden age of comic book superheroes. The mother in the story wants her son to be a superhero, Stevenson said. “He’s kind of hen-pecked into superhero-ism,” she said.

“This One Summer,” by Mariko Tamaki, a coming-of-age story about an adolescent girl. “It’s a wonderful evocation of summer life,” Stevenson said. “You can hear the screen door slamming, and the sand being dropped around.”

Both the Bulletin and the center are part of the Graduate School of Library and Information Science.

BIOENERGY CROPS, From Page 12

switchgrass. Jain said there are many other factors to consider, and the team is working to expand its model to give farmers a more complete picture of the risks and rewards of producing bioenergy crops.

“We want to develop an integrated system that can determine not only the potential yield of these crops, but also the economic cost and variability in returns from their production,” Khanna said. “In some places, farmers may have to invest more to plant these crops. We would like to examine how returns and risks from producing these crops differ across regions.”

The National Science Foundation and the United States Department of Agriculture supported this work.

photo by L. Brian Stauffer
Tenure-system faculty, unionization and some FAQs

1. Will faculty members be able to vote in an election before a union has been recognized by the labor board?

Illinois law allows a union to be recognized through either an election or a “card check” procedure. In Illinois, union organizers very often choose the card check process. When a card check process is used, union organizers approach faculty members and ask them to sign a card or some other document in support of forming a union. If the union collects signatures from a “majority interest” (50 percent plus one faculty member), a union is certified. A card check process does not require the union to hold an open, public election.

2. Will faculty members be able to provide the following in response to a requested document to a faculty member, and a union hasn’t returned a requested document to a faculty member, the faculty member can contact the labor board to question whether he or she is being included in the count of the faculty members who support forming a union.

The Illinois Educational Labor Relations Board has held that it will not invalidate a petition to form a union because employees did not realize that the document they signed could be used to form a union, holding that employees are expected to read and know the impact of documents they sign. 115 ILCS 5/2(n).

3. What if a faculty member misunderstood or wishes to revoke a union authorization card or a signed document before the union has been recognized?

It is difficult but possible for a faculty member to rescind a signed “card” before a union has been recognized by the labor board. A signed union authorization card or document is typically considered to be valid for six (6) months from the day it was signed/dated.

If someone wants to revoke a previously signed document in support of forming a union, he or she should notify the union in writing that he or she wishes to revoke that document and should request that the original document be returned to him or her. Sending this letter by certified mail helps to establish that the letter has been received by the union.

In addition to contacting the union, the faculty member also may wish to contact the university and share a copy of his or her letter with the Illinois Educational Labor Relations Board.

In the event that the union has submitted a petition to be certified as a bargaining unit, and the union hasn’t returned a requested document to a faculty member, the faculty member can contact the labor board to question whether he or she is being included in the count of the faculty members who support forming a union. The Illinois Educational Labor Relations Board’s contact information is: 160 N. LaSalle St., Suite N-400, Chicago, IL 60601 (312-793-3170).

4. If the Illinois Education Labor Relations Board recognizes a union for tenure-system faculty members, will department heads/chairs and other administrators be in the bargaining unit represented by the union?

Supervisors, managerial and confidential employees are excluded from the bargaining unit under the Illinois Education Labor Relations Act. Therefore, administrators such as department heads and chairs would be excluded from the bargaining unit and any document signed by them is not counted toward the showing of support necessary to form a union.

5. Does the university know whether the Campus Faculty Association has or is close to having the “majority interest” support necessary to certify a union for tenure-system faculty?

The university does not know how many signatures the Campus Faculty Association has collected in support of certifying a union for tenure-system faculty members. Union organizers are not required to provide that information in advance of filing a petition with the labor board. Because the Campus Faculty Association is not required to hold an open debate and election over the question of whether a union should be formed, the first public notice that a union has collected the necessary signatures (e.g., dues deductions approvals or other signed documents) for the labor board to recognize a union can be when a petition is filed with the labor board.

6. How would a tenure-system faculty union affect awarding salary increases based on merit?

The role of academic departments in determining merit salary increases could be altered if a tenure-system faculty union is created because wages, hours and working conditions are mandatory subjects of collective bargaining.
Chris Chipot, a Beckman senior fellow, will detail his expertise in avant-garde cuisine and its correlation with material science during a lecture at 2 p.m. Dec. 12 in Room 1005 of the Beckman Institute for Advanced Science and Technology.

One of the most iconic forms of avant-garde cuisine, also known as molecular gastronomy, involves the presentation of flavorful, edible liquids – ranging from exotic cocktails to simple olives – pickled and shaped into spheres. This technique, known as “spherification,” was invented 70 years ago.

In this lecture, Chipot presents the foundations of avant-garde cuisine and reviews a number of techniques. In particular, he describes the physical principles of spherification and shows how new insights can be gained from computer simulations into the formation and stability of alginate gels. The same gelling agent is utilized in material science, notably to solubilize otherwise insoluble carbon nanotubes. A live demonstration of the spherification of fruit juices will follow.

Chipot is the research director at the National Center for Scientific Research (CNRS) in France and co-director of the Associated International Laboratory between CNRS and the U. of I. He came to the Beckman Institute in October to work with Klaus Schulten, the director of the Theoretical and Computational Biophysics Group, on the Associated International Laboratory that they co-direct. An accomplished biophysicist, Chipot also has a passion for avant-garde cuisine and uses this skill to influence his research.

Illini Union Art Gallery

Children’s book artist to display work

Illinois alumna Judy Lee will premiere her exhibit, “Monet and the Waterlily Friends,” Dec. 4 in the Illini Union Art Gallery. An opening reception with light refreshments will follow. The work will be on display through the online funding platform Kickstarter this summer.

Lee earned her BFA in graphic design at the U. of I. and taught preschoolers for three years. She attended an exhibit at the New York Public Library in 2013 titled “The ABCs of It: Why Children’s Books Matter” and decided to start writing children’s books.

“Art is a safe space where you can experiment with multiple solutions to a problem. Particularly in young children, it boosts confidence and motor and communication skills,” Lee said.

The exhibit includes images from the process of creating the book, original illustrations and Monet-inspired art.

To read more about her Kickstarter campaign, as well as a detailed overview of the project, visit go.illinois.edu/JudyLeeProject.

Saturday Physics for Everyone

Magnets, big machines featured Dec. 6

U. of I. professor of physics Gregory MacDougall will be the guest lecturer Dec. 6 for Saturday Physics for Everyone. His free public lecture – “Magnets and Big Machines: The Use of Neutrons to Explore Magnetism in New Materials” – will begin at 10:15 a.m. in 141 Loomis Laboratory.

Physicists talk about magnetic materials as a regular lattice of atoms, where each atom hosts a series of spinning electrons acting as tiny bar magnets. Characterization and control of these magnetic patterns is central to technologies underpinning modern data storage, electric motors, sensors and medical imaging. Physicists study spin systems as part of the search for new superconductors and novel quantum states, and observe the emergence of particles in these systems that don’t exist in the universe at large.

MacDougall will present recent and ongoing developments at U.S. and international neutron facilities, and discuss how the research being done is impacting technology development and the greater understanding of condensed matter physics.

Free parking is available on the east side of Loomis in Lot B-21. For more information, contact Toni Pitts, 217-244-2948.

This is the last fall lecture in the series.

Graduate College

Mentoring workshop for faculty is Jan. 14

Faculty members who mentor graduate students are invited to the 10th anniversary of the Graduate College Annual Mentoring Workshop Jan. 14 in the Illini Union Ballroom.

This year’s interactive workshop will include a keynote address by Bruce M. Shore, author of “The Graduate Advisor Handbook: A Student-Centered Approach.” Shore is a professor emeritus of educational psychology at McGill University. He has been recognized for his graduate advising and other teaching by his faculty’s Distinguished Teaching Award, the university’s David Thomson Award for Excellence in Graduate Teaching and Supervision, the Principal’s Prize for Excellence in Teaching, and by the Canadian Committee for Graduate Students in Education Mentorship Award.

His book highlights the importance of a mentoring partnership in which both parties need to be invested. Shore emphasizes the interpersonal relationships at the heart of advising and reveals how advisors can draw on their own strengths to create a rewarding rapport.

The workshop will begin at 9 a.m. (refreshments at 8:45 a.m.) and end at 1 p.m. This event is free to U. of I. faculty members. Lunch will be provided.

Registration is required and can be done online at go.illinois.edu/mentor_2015. The first 50 people to register and attend will receive a free copy of Shore’s book. For program details, visit the Graduate College website at www.grad.illinois.edu/events/mentoring/2015 or contact the Graduate College at grad@illinois.edu.

Streamlining services

BPI Shared Service report available

The Business Process Improvement Shared Service is a universitywide service that provides support for initiatives seeking to improve customer service, free up staff time, deliver services faster and reduce total cost. Support is provided through facilitation of targeted process-improvement projects, a methodology and toolset for executing process-improvement projects, and training on the concepts and techniques of process-improvement initiatives.

The BPI Shared Service annual report reviews accomplishments in fiscal year 2014 and the plans for fiscal year 2015. It also showcases the various university units that have supported, participated in and guided the BPI Shared Service in fiscal year 2014. To download the annual report, go to www.illinois.edu/co/services/bpi/current_and_past_projects/.

For more information about the service, visit www.illinois.edu/co/services/bpi/.

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Amy Woods, a professor of kinesiology and community health, was named a fellow of the National Academy of Kinesiology. She was among 12 U.S. and three international scholars inducted into membership at the academy’s 84th annual meeting in September in Austin, Texas. The academy honors its members who have directly or indirectly contributed significantly to the study of and/or application of the art and science of human movement and physical activity. Woods primarily focuses her research on understanding and enhancing teacher development, improving physical education teacher effectiveness and advancing school-based physical activity.

**BECKMAN INSTITUTE**

Marni Boppart, a professor in the Bioimaging Science and Technology Group at the Beckman Institute for Advanced Science and Technology and a professor of kinesiology and community health, has been elected a fellow in the American College of Sports Medicine. The fellowships recognize “professional achievement and competence in the related disciplines of sports medicine through education, published works, professional practice and a demonstrated interest in and/or contribution to the goals of sports medicine.” Boppart will be inducted at the national meeting in May.

Beginning in January, Monica Fabiani, a professor in the Beckman Institute’s Cognitive Neuroscience Group and a professor of psychology, will become editor-in-chief of the journal Psychophysiology (Wiley-Blackwell).

Emad Tajkhorshid, a professor in the Theoretical and Computational Biophysics Group at the Beckman Institute and professor of pharmacology, has received a 2015 Innovative and Novel Computational Impact on Theory and Experiment award. The award provides 96 million hours of massive supercomputing at a leadership computing facility. Tajkhorshid’s project, which has been developed and tested in his lab, will study the transition between structural intermediates of a number of transporters using a novel combination of several replica-based techniques coupling a massive array of all-atom molecular dynamics simulations. Curtis Johnson, the assistant director for magnetic resonance operations in the Biomedical Imaging Center at the Beckman Institute, received the Young Investigator Award at the BRAIN Grand Challenges conference in Washington, D.C., hosted by IEEE’s Engineering in Medicine and Biology Society. The goal of the conference is to discuss the challenges in addressing the national government’s BRAIN Initiative, and Johnson was honored for his research in elastography.

**BUSINESS**

Jeffrey R. Brown, the William G. Karnes Professor of Finance and the director of the Center for Business and Public Policy, has been appointed by the Social Security Advisory Board to the Technical Panel on Assumptions and Methods, an expert panel to review the assumptions and methods used by the Social Security trustees in their annual report on the program’s financial status. “The nation relies on these projections for measuring the status of the nation’s most important social insurance program and for evaluating proposed reforms,” said Henry J. Aaron, chair of the board. “It is vital that these projections embody the best possible data and methods.”

This panel is the fifth the board has commissioned since 1999. The panel, which consists of renowned economists, demographers and actuaries, will issue a final report in fall 2015.

Andrew Alleyne, the Ralph M. and Catherine V. Fisher Professor and associate head for undergraduate programs in the department of mechanical science and engineering, has been awarded the Henry M. Paynter Outstanding Investigator Award by the American Society of Mechanical Engineers. This award is given biennially by the Dynamic Systems and Control Division of ASME to a division member who has demonstrated sustained outstanding research contributions, either basic or applied, as a mechanical engineering professional to fields of interest to the division. Alleyne’s research addresses a range of issues within controls.

Elizabeth Hsiao-Wecksler, a professor of mechanical science and engineering, has been named a fellow of the American Society of Mechanical Engineers. Her research program uses methods from control theory, movement analysis, design and dynamic systems modeling to investigate issues related to musculoskeletal biomechanics and rehabilitation engineering. The ASME Board of Governors confers the fellow grade of membership on worthy candidates to recognize their outstanding engineering achievements. Nominated by their peers, fellows have had 10 or more years of active practice and at least 10 years of continuous active corporate membership in ASME.

Joseph W. Lyding, a professor of electrical and computer engineering, has won the 2014 Award for Outstanding Research from the Prairie Chapter of the American Vacuum Society “for pioneering developments in scanning tunneling microscopy, instrumented and their applications to nanotechnology.”

Wen-mei W. Hwu, the AMD Jerry Sanders Chair of Electrical and Computer Engineering, has won the 2014 B. Ramakrishna Rao Award from the IEEE Computer Society. The award recognizes significant accomplishments in the field of microarchitecture and compiler code generation.

The award is named for the late Rao, a former ECE Illinois faculty member who went by the first name Bob and made significant contributions in the fields of computer architecture and microarchitecture.

Hwu will accept the award in December in the United Kingdom. Of all the awards he’s won, Hwu said this one is particularly special because of his work with Rao, and Rao’s legacy.

Songbin Gong, a professor of electrical and computer engineering, won the DARPA Young Faculty Award for a concept that aims to make electronic chips much more efficient by completely replacing the transistor with a new computing systems technology. This award, presented yearly by the Defense Advanced Research Projects Agency, is designed to recognize untensed college faculty members the agency believes will be leaders in their fields. It provides them with mentoring, funding and DARPA contacts for the research they do for the agency.

David N. Ruzic, a Bliss Professor of Engineering in the department of nuclear, plasma and radiological engineering, has been elected a fellow of the American Physical Society “for major contributions toward the use of lithium as a plasma facing component to reduce the build-up of materials on the walls of tokamaks.”

Ruzic has received many research recognitions, including the 2014 Award for Outstanding Research from the American Physical Society “for major contributions toward the use of lithium as a plasma facing component to reduce the build-up of materials on the walls of tokamaks.”

Innovative and Novel Computational Impact on Theory and Experiment award.
Model evaluates where bioenergy crops grow best

By Liz Ahlberg
Physical Sciences Editor

Farmers interested in bioenergy crops now have a resource to help them determine which kind of bioenergy crop would grow best in their regions and what kind of harvest to expect.

Researchers at the U. of I. have published a study identifying yield zones for three major bioenergy crops.

“The unique aspect of our study is that it provides detailed information about where these crops can grow, in terms of their location and stability over time, which has not been done in the past,” said U. of I. atmospheric sciences professor Atul Jain, who led the study with agriculture and consumer economics professor Madhu Khanna.

Although corn has been the main feedstock used for ethanol production, relying solely on corn is not sustainable because of its impacts on the environment and food prices.

Other crops show greater potential for ethanol production, particularly large perennial grasses such as Miscanthus and switchgrass. These grasses yield more ethanol per hectare in the U.S., while needing fewer resources than corn.

"With growing interest in bioenergy crops as a potentially important source of energy, it is crucial to explore high-yielding feedstock sources that could provide abundant biomass for large scale biofuel production and minimize the amount of land diverted from food to fuel production," Jain said. "The extent to which this goal can be achieved will depend on the biophysical potential of producing bioenergy crops on the available land."

The Illinois researchers studied three biofuel crops to determine where they would grow best in the United States: Miscanthus and two types of switchgrass, Cave-in-Rock and Alamo. They used a land-surface model called Integrated Science Assessment Model (ISAM), developed in Jain’s lab, which takes into account environmental attributes such as water and temperature, biological properties such as nutrient availability, and the dynamic response of the crops to changes in environmental conditions.

The researchers calibrated and validated the model using experimental data collected at more than 75 sites across the U.S., using the model to determine yields over 10 years. They identified regions likely to continuously produce higher or lower yields for each crop, based on favorable or unfavorable conditions.

For example, Alamo switchgrass has a high, stable yield in the southeastern states, while Miscanthus and Cave-in-Rock switchgrass grow best across the Midwest. Across Indiana, Ohio and Kentucky, Miscanthus has about twice the yield of switchgrass, but the yield is unstable, so farmers may have to modify production practices and apply additional resources annually to reduce variability in Miscanthus yields.

The researchers expect the results of their study, published in the journal BioEnergy Research, will enable farmers to make better decisions about which bioenergy crop to grow. A farmer in the south can look at the maps and see that his area is in the low-yield, unstable zone for Miscanthus, but the high-yield, stable zone for Alamo.

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