‘Moldy media’ get a second look following campus survey

By Mike Helenthal
Assistant Editor

A media survey has identified mounds of ‘moldy media’ that have been languishing for years in storage at departments all over campus.

The organizers of the survey, initiated by the Center for Multimedia Excellence and conducted by the university library, say the survey came about because nobody knows what’s in them. "There’s probably a lot more sitting out there," said Joshua Harris, the media preservation coordinator for the university library, who initiated the Center for Multimedia Excellence identified around 400,000 pieces of old media on campus that need to be prioritized and preserved. There are hopes the survey will lead to a wider campus effort to save old audio, video and film.

Moisture problems are a concern for the library, and they are aware that a lot of the older content has historical value now," she said. "The campus has spent a lot of money creating this content and if we don’t move, in 10 or 20 years a lot of it will be gone. Our closets certainly are not getting larger and there’s not a one-size-fits-all solution." Joel Steinfeld, Public Affairs band manager and CME member, said the urgency to preserve the materials is real. "It’s critically important that we keep working together to identify and preserve the audio and video files that document our faculty’s research and knowledge," he said. "We have to keep them so they are accessible to the public and by future researchers. To not do so would be a smaller scale, modern version of the burning of the Library of Alexandria.

Now that the survey is completed the question becomes ‘What is valuable?’"  SEE PRESERVING MEDIA, PAGE 6

Cradle turns smartphone into handheld biosensor

By Liz Ahlberg
Physical Sciences Editor

Researchers and physicians in the field could soon run-on-the-spot tests for a wide variety of molecules containing a series of optical components, lenses and filters — found in much larger and more expensive laboratory devices. The cradle holds the phone’s camera in alignment with the optical components. At the heart of the biosensor is a photonic crystal. A photonic crystal is like a mirror that only reflects one wavelength of light while the rest of the spectrum passes through. When anything biologically attaches to the photonic crystal — such as proteins, cells, pathogens or DNA — the reflected color will shift from a shorter wavelength to a longer wavelength.

For the handheld iPhone biosensor, a normal microscope slide is coated with the photonic material. The slide is primed to react to a specific target molecule. The photonic crystal slide is inserted into a slot on the cradle and the spectrum measured. Its reflecting wavelength shows up as a black gap in the spectrum. After exposure to the test sample, the spectrum is remeasured. The degree of shift in the reflected wavelength tells the app how much of the target molecule is in the sample.

The entire test takes only a few minutes; the app walks the user through the process step by step. Although the cradle holds only about 20 optical components, it performs as accurately as a large $50,000 spectrophotometer in the laboratory. So now, the device is not only portable, but also affordable for fieldwork in developing nations.

In a paper published in the Jour- nal Lab on a Chip, the team dem-onstrated sensing of an immune system protein, but the slide could be primed for any type of biological molecule or cell type. The researchers are working to improve the manufacturing process for the iPhone cradle and are working on a cradle for Android phones as well. They hope to begin making the cradles available next year.

Cunningham’s group is now collaborating with other groups across the campus at the U. of I. to ex-plore applications for the iPhone biosensor. The group recently re-ceived a grant from the National Science Foundation to expand the range of biological experiments that can be performed with the phone, in collaboration with Steven Lumetta, a professor of BioSENSORS, PAGE 3
A university committee has recommended against adopting the Common Application for admissions on the Urbana and Springfield campuses. UIC began using the undergraduate admission application which is shared by 488 colleges and universities, for fall 2013 admissions. "The UIC experience is very new – an experiment in the making," said Christopher Pierre, the university vice president for academic affairs, told the U. of I. Board of Trustees on May 29 meeting on the Chicago campus. "The overall result is a good result, but there have been consequences we didn’t fully understand yet, which we’ll be studying." The Common Application is a nonprofit organization that promotes college access and success, and access in college admissions through a "holistic selection process" that includes an essay, letters of recommendation, and additional information not related to student employment, internships and personal experience. A team formed by then-U. I. president Max emojis and made mistakes in the university consider using the Common Application for each campus. "We have potential advantages in improved viability and branding and better outreach to out-of-state and international applicants." The potential change in the Common Application resulted in a slight increase in the number of applications and improvement in the quality of applicants, he said, but in-state applications were down and the numbers in all individual colleges shifted compared to previous years. "It’s hard to tell if this is a result of the Common App or not," he said, adding that further analysis is needed. Administrators at UIC and Urbana both concluded "it was not in their best interest to be part of the experiment," he said. The Urbana application process, which uses applicant-reported academic records instead of transcripts, is not compatible with the current version of the Common App. The cost of adopting the Common App and the prospect of impending improvements to the current Common App are additional reasons to wait, Pierre said. The university will monitor admission and enrollment trends at its three other campuses and other Big Ten universities and revisit the use of the Common App later, he said. "The UIC experience is very new – an experiment in the making," Christophe Merriman, the associate director of the Institute of Government and Public Affairs, in a report to the board. "The Common App has taken a sharp upturn," Merriman said. "The Illinois economy appears to be faltering relative to its March and April benchmarks." Although the U.S. economy is slowly improving, "Illinois is one of the very few states in the country going in the other way," he said. Merriman said the state has amassed $9 billion in unpaid bills. Of even more concern, however, is the scheduled 2015 expiration of an agreement of permanently dropping Chief Illiniwek tradition. He suggested the board to bring back the Chief symbol and proposed an agreement of potentially dropping Chief Illiniwek and access to a Common App for the campus. "We’ve heard something in our place would fill a void, but would have to be a student-driven thing," he said. "If people have something in their place it would fill a void, but would have to be a student-driven thing." The state came to the fare at the May 29 U. I. Board of Trustees meeting in Chicago, then former Chief portrait Rick Le- gue asked the board to bring back the Chief symbol and maintain it. Legue, representing a group of former portrayers, suggested the university enter talks with the Oklahoma-based Peoria tribe to sanction a "re-invented" Chief Illiniwek tradition. He suggested the group has “every reason to believe” that tribal leaders are willing to discuss the idea. "Six years after the chief’s retirement, the desire for what the Chief represents to Illini fans is strong across this country," he said. "We hear from our fellow Illini from every walk of life of the proposal, which was not acted upon by trustees. The Chief would appear twice during the year, once for a “Three-In-One” performance and again during a "theme-based program" at a single event designed to promote the university and charitable programs. The pro- tor would remain stationary and not dance during the appearance, and Legue said the event could raise hundreds of thousands of dollars. The Chief’s regalia, originally in- spired by Lakota-Sioux dress, also would change to reflect Peoria tribe traditions. Legue suggested entering into an agreement with Peoria tribal leaders and re-evalu- ating the symbol, the chief symbol for 425,000-plus living alumni, all of whom experienced the Chief in one way or another on campus," he told trustees. Joyce Tolliver, a professor of Spanish and a member of the SEC, spoke on behalf of May 29 proposal, though she said her comments were her own and not part of the SEC resolution. "For some people, the Chief represents a proud tradition; for others, the Chief represents a shameful legacy," Tolliver said. "What is not open to debate is that the use of the Chief symbol relates to the tribe and the Peoria community. That division will become a matter of regular public display again if the symbol is granted approval. She said bringing back the Chief, even on a limited basis, would result in negative press coverage, accusations of racial insen- sitivity and the renewed threat of NCAA sanctions. "It will consume untold hours in distrac- ing debate that does nothing to move our university into a state of excellence," she said. In her May 13 statement to the SEC, Wise said her decision to permanently abandon the Chief symbol had come after consultations with all sides of the issue, including Peoria tribal leaders. She said Peo- ria Chief John Fronman had identified bring-_ing back any version of the symbol would be disrespectful. The SEC’s statement said it "supports the decision of Champaign-Urbana Phyllis Wise that the Chief is part of our campus’s past, not its present or future." The statement’s "affirms and reinforces" the Chief. Page 4

Flash Index: Unemployment improves growth

Afer climbing by more than a full percentage point in April, the U. of I. Flash Index held relatively steady in May, rising just one-tenth of a point to 105.9. The reading is the highest since August when it stood at 106. The jump in the index to 105.8 in April from the previous month rises primarily to unusually large final tax payments. The state’s unemployment rate remains high, however, which is putting a drag on the state’s recovery, according to economist Fred Giertz. The university’s Institute of Government and Public Affairs. The rate fell in April from 9.5 percent to 9.3 percent, but it remains higher than one year ago and is still well above the 7.5 percent national jobless rate. "During the long and slow recovery from the 2007-9 recession, growth in out- put and jobs has been slower than normal in the post-recession years" Giertz said. "Growth will need to accelerate to get back to pre- recession levels." Two components of the index (individu- al and corporate income tax receipts) were down in real terms compared to the same month last year while sales-tax receipts were up by a small amount, Giertz said. The Flash Index is a weighted average of Illinois growth rates in corporate earnings, consumer spending and personal income. Tax receipts, which are based on federa- lional income and retail sales are adjusted for inflation before growth rates are calculated. The Flash Index is an unseasoned component and then calculated for the 12-month period using data through May 31, 2013. The Board passed a new policy limiting the use of search firms to fill university positions, in accordance with a new state law. However, the new law affords the board the discretion to use a search firm, when the board determines that a search firm will be approved by the campus and the university president. The board passed a new policy limiting the use of search firms to fill university positions, in accordance with a new state law. However, the new law affords the board the discretion to use a search firm, when the board determines that a search firm will be approved by the campus and the university president. Two components of the index (individu- al and corporate income tax receipts) were down in real terms compared to the same month last year while sales-tax receipts were up by a small amount, Giertz said. The Flash Index is a weighted average of Illinois growth rates in corporate earnings, consumer spending and personal income. Two components of the index (individu- al and corporate income tax receipts) were down in real terms compared to the same month last year while sales-tax receipts were up by a small amount, Giertz said. The Flash Index is a weighted average of Illinois growth rates in corporate earnings, consumer spending and personal income. Tax receipts, which are based on federa- lional income and retail sales are adjusted for inflation before growth rates are calculated. The Flash Index is an unseasoned component and then calculated for the 12-month period using data through May 31, 2013.应有的
until the U. of I. astronomy department’s 117-year-old telescope is returned to full working order. Mars will just have to sit in midretrograde.

Parts of the telescope, famous for its starring role in Joel Stebbins’ globally recognized research in photoreceptor photomixing (star brightness), were packed up and carried away to a lab as the conservatory workshop and are expected to return in time for the department’s open house on Oct. 28.

“They will restore all of the components of the telescope and return it in great working order,” Dunne said. “There’s not one thing wrong with it – it’s just a matter of little things that need to be addressed everywhere.”

The owner of the conservatory, Chris Ray, made a visit to campus last November and estimated what renovations were needed. Although the telescope still functioned, he noted “there are a few issues with it” and that taking care of it would be a matter of someone volunteering for the job. It was a matter of someone volunteering to take care of it and then that person leaving or retiring.

The renovation project has been led by a group of U. of I. alumni, who announced last year they were forming a nonprofit organization, Friends of the U. of I. Observatory, to raise funds to save the aging observatory building and the telescope.

After getting blessings from the astronomy department to proceed, the group established an alumni database and soon had raised $10,000. That got the attention of the chancellor’s office, which offered to add nearly $50,000 for the telescope work through the Chancellor’s Fund. The fund comprises gifts from alumni and other donors.

“We’re incredibly thankful for the chancellor’s participation in this project,” Dunne said. “It shows she (Phyllis Wise) realizes the historical importance of the observatory and is interested in helping preserve it.”

The telescope’s most useful era of discovery was already behind it. Dunne said it the first time I said, ‘This looks like the first time I saw the earth.’”

Most of the telescope work is being done at the observatory with the assistance of students from Swarthmore College. The work includes lubricating components, cleaning, and stripping and refinishing the telescope. Says Dunne: “I’ve always been good at mechanical things and I’ve been an amateur astronaut since I was 16,” he said.

His company, Ray Museum Studios, is restoring the U. of I. astronomy department’s 117-year-old telescopes at the Lincoln Park Conservatory, Portland, Ore.

Ray also is an artist and sculptor, and designer and builder of museum exhibits, specifically the reconstruction of ancient cities. He sells his art online and he has built reconstructions for the American Museum of Natural History in New York City and for the University of Pennsylvania Archaeological and Architectural Museum.

“I’ve always been interested in a lot of things,” he is apt to say when you ask about the origin of his interests.

He credits his parents, who were landscape architects, for his lifelong love of outdoors. When he finds a topic he likes, he immerses himself in it. He was a physics and biology major at Reed College in Portland, Ore.

He doesn’t consider himself an expert on telescopes. In fact, he said he has learned as much working with them as he has reading about them.

“The first step is to figure out how to take it all apart,” he said. The U. of I. telescope was dismantled and the pieces labeled and kept in separate bags to avoid confusion when it is put back together.

“It’s something where you don’t really want to find these extra parts left over when you’re done,” he said.

Most of the telescope work is being done at the observatory with the assistance of students from Swarthmore College. The work includes lubricating components, cleaning, and stripping and refinishing the telescope. He said the group will meet with astronomy department officials in the coming months to discuss other issues associated with the observatory building, and how extensive any fundraising effort should be.

One of the major issues is how to best utilize the built-on east and west wings of the observatory building, which is undergoing renovation work could open upper classroom space at the center of campus. Leake said those decisions will have to be made by astronomers and observers, and that the friends group is meant to be supportive in any way.

“It’s really hard to let it sit and fade away,” he said. “But it’s very nice to think about some of the great astronomers who have looked through that telescope. There is a real value to saving it.”

Conservator possesses artist’s sensibility, sense of awe

By Mike Helenthal Assistant Editor

Chris Ray is a dabblor extraordinaire.

His company, Ray Museum Studios, is restoring the U. of I. astronomy department’s 117-year-old telescopes at the Lincoln Park Conservatory, Portland, Ore.

At 1954, though its operating functions have been upgraded over the years. Dunne said the telescope still works well enough for stargazing, but that its regular upkeep has been less important in the years as research using Victorian-era telescopes gave way to the digital age.

“We continue to use it for astronomy classes and for outreach,” he said. “It just became impossible at some point to have an expert on 19th-century telescopes on hand. It was a matter of someone volunteering to take care of it and then that person leaving or retiring.”

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Jim Kalter, a professor emeritus of astronomy, was on hand May 22 to watch the telescope’s disassembly. He said he has fond memories of the observatory and in 1964, listed as a National Historic Landmark and in the National Register of Historic Places.

Jim Kalter arrived in 1964, the telescope’s most useful era of discovery was already behind it.

“At that time, 1964 was in the first part of the 20th century,” he said. “When I saw it the first time I said, ‘This looks like the place I’m going to be for a while.’ Now it’s like a daguerreotype, compared to to-day’s electronics and the Web.”

He said the observatory, now in the middle of a campus that was considered on its outskirts. He said he is pleased it is being repaired.

“It was clear out at the Montrose Plots,” he said, “but it was much to see there. All was in a se-crect back then. Things were different – Green Street was just a swamp.”

Kalter still occasionally will take stu-dents to the observatory to look to the heavens with the old technology. He said students always are impressed by the experience. “The first response is usually, ‘Oh my God,’” he said. “Then they’ll say, ‘That’s not real, someone painted it on.’ It’s something you can see with your eyes and not on a computer screen.”

Ray said he has never lost that sense of awe. “When the telescope was first built there was this religious feeling from being able to look into the heavens and out to where God came from,” he said.

Leake said being part of this國家的近畿大學
Mechanism links key inflammatory marker to cancer

By Diana Yates

In a new study described in the journal Oncogene, researchers reveal how NF-kappa B and the inflammatory response can be transformed into a primary contributor to tumor growth.

Scientists call this Jekyll-and-Hyde molecule NF-kappa B. In healthy cells, it is a powerful “first responder,” a vital part of the body’s immune and inflammatory responses. It spends most of its life in the cell’s cytoplasm, quietly awaiting orders. But when extracellular signals — of a viral or bacterial invasion, for example — set off chemical alarms, the cell unchains this warhorse, allowing it to go into the nucleus where it spurs a flurry of defensive activity, including the transcription of genes that trigger inflammation, promote cell proliferation and undermine cell death.

Researchers have known for years that a hyperactive form of NF-kappa B that gets into the nucleus and stays there is associated with various cancers. But they didn’t know what was keeping it active in the nucleus.

“Normally in the cell NF-kappa B is in the cytosol, it’s not in the nucleus, and it’s not activated,” said U. of I. medical biochemistry professor Lin-Feng Chen, who led the new study. “You have to stimulate normal cells to see NF-kappa B in the nucleus. But in cancer cells without any stimulation you can see this nuclear form of NF-kappa B. The cell just won’t die because of this. That is why NF-kappa B is so important in cancer.”

In the study, Chen’s group found that another molecule known to help regulate gene expression, called BRD4, recognizes a specific amino acid on a subunit of the NF-kappa B protein complex after the amino acid has been marked with a specific tag, called an acetylation group. This “acetylation” allows the BRD4 to bind to NF-kappa B, activating it and preventing its degradation in cancer cells.

Previous studies had shown that BRD4’s recognition of the acetylated subunit increased NF-kappa B activation, but this recognition had not been linked to cancer.

BRD4 belongs to a class of molecules that can recognize chemical markers on other proteins and interact with them to spur the marked proteins to perform new tasks. Chemical “readers” such as BRD4 are important players in the field of epigenetics, which focuses on how specific genes are regulated.

“In epigenetics, there are writers, there are readers, there are erasers,” Chen said. The writers make modifications to proteins after they are formed, without changing the underlying sequence of the genes that codes for them. These modifications (such as acetylation) signal other molecules (the readers) to engage with the modified proteins (the writers) and the proteins to fulfill new roles in the life of the cell. Epigenetic erasers remove the marks when they are no longer of use.

Such protein modifications have been shown to be critically involved in transcription regulation and cancer development,” the study’s authors note.

To test whether BRD4 was contributing to the sustained presence of NF-kappa B in the nucleus of cancer cells, Chen and his colleagues exposed lung cancer cells in cell culture and in immune-deficient mice to JQ1, a drug that interferes with BRD4 activity. Exposure to JQ1 reduced proliferation of lung cancer cells and suppressed the ability of lung cancer cells to induce tumors in immune-deficient mice, the researchers found.

The researchers also discovered that depletion of BRD4 or the treatment of cells with JQ1 induced the degradation of the NF-kappa B subunit marked by BRD4.

Chen said that BRD4 likely prevents other molecules from recognizing the hypocreaser region of NF-kappa B, blocking the expression of genes regulated by NF-kappa B.

“This is an example of how epigenetic regulators and NF-kappa B may one day be targeted for the treatment of cancer,” he said.

Researchers from Illinois biochemistry professor Satish Nair’s laboratory and the laboratory of James Bradner at the Dana-Farber Cancer Institute contributed to this study.

Team finds gene that helps honey bees find flowers (and get back home)

By Diana Yates

Honey bees don’t stay out knowing how to find flowers or even how to get around outside the hive. Before they can forage, they must learn how to navigate a changing landscape and orient themselves in relation to the sun.

In a new study, researchers report that a regulatory gene known to be involved in learning and the detection of novelty in vertebrates also kicks into high gear in the brains of honey bees when they are learning how to find food and bring it home.

Activity of this gene, called Egr, quickly increases in a region of the brain known as the mushroom bodies whenever bees try to find their way around an unfamiliar environment, the researchers observed. This gene is the insect equivalent of a transcription factor found in mammals. Transcription factors regulate the activity of other genes.

The researchers found that the increased Egr activity did not occur as a result of exercise, the physical demands of learning to fly or the task of memorizing visual cues; it increased only in response to the bees’ exposure to an unfamiliar environment. Even seasoned foragers had an upick in Egr activity when they had to learn how to navigate in a new environment.

“This discovery gives us an important lead in figuring out how honey bees are able to navigate so well, with such a tiny brain,” said Gene Robinson, a professor of entomology and neuroscience and director of the Institute for Genomic Biology at the U. of I. “And finding that it’s Egr, with all that this gene is known to do in vertebrates, provides another demonstration that some of the molecular mechanisms underlying behavioral plasticity are deeply conserved.

Researchers from Illinois professor Lin-Feng Chen’s laboratory and the laboratory of James Bradner at the Dana-Farber Cancer Institute contributed to this study.

CHIEF, CONTINUED FROM PAGE 2

similar resolutions against the Chief symbol passed by the senate in 1998 and 2001. Resolutions that effectively called the Chief “an inappropriate symbol” for the university. It also supports a 2007 decision by the U. of I. Board of Trustees that called for the elimination of the Chief symbol. Copies of the resolution were sent to the board secretary, senate leaders and the chancellor of the U. of I.’s two other campuses in Chicago and Springfield.

“We see no reason to revisit that decision,” the SEC statement says.

Wisconsin also supported the idea of eliminating the Chief symbol, and that the issue would be included in the SEC meeting.

“I’m trying to find ways to elevate our knowledge of Native American culture as it relates to Illinois,” she said.

Discovery: A regulatory gene that aids learning and the detection of novelty in vertebrates increases in activity in the honey bee brain whenever it explores an unfamiliar environment.

electric bee brain whenever it explores an unfamiliar environment. "The electric bee brain whenever it explores an unfamiliar environment."
Summer reading: Movies, leisure time increase book sales

The Summer Reading series returns to Illinois Union Bookstore, takes a look at trends in summer reading and book publishing, and offers a few personal recommendations.

There are four publishing seasons for trade books, just as there are four physical seasons. Fall and spring are the primary publishing seasons, with fall being the busiest.

Trade books are introduced in the season that publishers guess will be best in terms of sales. Spring and summer book releases are definitely geared toward leisure reading, including “beach reading,” and books that are derived from movie blockbusters and vice versa.

Illini Union Bookstore customers made F. Scott Fitzgerald’s “The Great Gatsby” one of this bookstore’s bestsellers early in May, even before the debut of Baz Luhrmann’s latest movie version of the story. The film version of Max Brooks’ novel “World War Z” is due out in June. The book is already a cult pick here and the film will probably send even more out to buy the book. “Star Trek” books have been on the scene for almost 50 years and continue to sell. The books may get a boost from the new movie, “Star Trek Into Darkness,” based on the book by the same name.

Our customers come from all walks of campus and community life and we find that their summer reading tastes are diverse and wide. We take pride that we try to customize our general book title selections to fit as many identifiable needs and wants as possible, and consequently, we sell just about one or two of a lot of titles on the second floor (where general books are housed). It’s therein that a bit hard to spot trends, but we do see a few.

With vacations and perhaps a slightly slower pace of living, some people tend to see reading as a seasonal luxury and many seem to equate literary indulgence with fiction. We definitely sell more fiction in summer than any other season, including books from our mystery and thriller shelves.

The book industry is excited about Dan Brown’s newest thriller, “Inferno: A Novel.” We’ve sold quite a few copies to date although we haven’t yet seen a sales spike in books by Dante, from whom Brown evidently draws source material. Perhaps that will come if those who read Brown’s “Inferno” want to dig deeper as they did with “The Da Vinci Code.” Other early- to mid-20th century works, such as mysteries by Agatha Christie, are perennial favorites. Sherlock Holmes always sells. The James Bond 60th celebration on this campus has brought readers to Raymond Benson and John Gardner.

Stephen King’s “Under the Dome” (1,088 pages) is due out as a summer television series but I have higher (sales) hopes for his slimmer detective novel called “Joyland” that was just released. Set in 1973, it’s about a college student whose summer job is at an amusement park. Its initial release will be in paperback only – no e-book by King’s request – because of his own nostalgia for summer reading through the summerback season.

Although some have resisted its charms, I believe the e-book is here to stay. E-books are currently about 22 percent of book sales and climbing. The trouble is, no one yet agrees on the platform and there are many types of e-reader devices. The present reality in bookselling is the hybrid model: Many want e-books; some still enjoy the tactile experience of shopping for a book at a brick-and-mortar shop and then taking a print book home to read, shelve and collect; other consumers continue to want to do both.

Students here definitely resonate to the recent trend in the popularity of dystopian novels, and classics such as “1984,” “Animal Farm,” and “Fahrenheit 451” always sell well here, summer included, and also newer works in that genre: “The Hunger Games” trilogy, by Suzanne Collins, and “Oryx and Crake,” by Margaret Atwood.

Among the new works of general fiction slated to be in demand this summer are “And the Mountains Echoed,” by Khaled Hosseini, author of “The Kite Runner” and “A Thousand Splendid Suns,” and Kevin Powers’ “The Yellow Birds,” set in wartime Iraq and just out in paperback.

Our Authors Corner, located in the south-east corner of the second floor, has comfortable seating and great views of the changing seasons and weather patterns. We stock it with books by campus authors and community publishers, including Ninth Letter, U. of I. Press, Dalkey Archive and a changing cross-section of campus and alumni authors. Local bestsellers here include Larry Kanfer’s books of photographs and the Moms Association cookbook, “Taste of Illinois.”

I’ll always recommend faculty and alumni authors for summer reading. My favorites include anything by Jean Thompson, including her newest novel, “The Humanity Project.” (David Sedaris has been quoted as saying she’s one of the authors he most enjoys reading.) I also suggest a little gem of travel nonfiction by Philip Graham, “The Moon, Come to Earth” – a valentine of a biography on Lisbon and family.
Betty Bailey, 72, died May 17 at Heartland Brighton Home. Bailey worked as a cook at Busey-Evans Residence Hall for 32 years, retiring in 2006.

James Louis Bailey, 91, died May 16 at his Chicago home. He retired in 1991 as professor emeritus of voice after 40 years in the U. of I. School of Music. He also served as chairman of the Voice Division. Memorials: Salvation Army, salvationarmyusa.org.

Charles Wesley Clark, 89, died May 25 at the Urbana County Nursing Home. Clark worked at the U. of I. for 20 years, retiring in 1988 as a building service worker for University Housing. Memorials: to the family or to the Church of the Living God.

Peter Franklin-White, 90, died May 19 at Carle Foundation Hospital, Urbana. He was a professor of theater at the U. of I. for 28 years, resigning in 1997. He also was a guest art teacher for the Illinois Opera Theatre.

Martha R. Hanson, 93, died May 23 at Carle Foundation Hospital, Urbana. Hanson retired from the U. of I. as a clerk. Memorials: First United Methodist Church of Urbana, fumc-urbana.org; or Tuscola United Church of Christ, tuscolachurch.org.

Donald Lee Johnson, 79, died May 7, 2013 at Owens Funeral Home, 101 N. Elm St., Champaign. Puckett, 87, died May 9 at the Piatt County Nursing Home, Monticello. He was a U. of I. professor for 18 years, returning in 1985 as a professor emeritus of agricultural engineering. Memorials: Alzheimer’s Foundation of America, alzfdn.org.

A memorial service for Robert H. Suter will take place at 1 p.m. June 14 at the First Presbyterian Church of Champaign, 302 W. Church St., with a reception after the service. Suter, 90, died May 4 at his Champaign home. He worked at the U. of I. for nearly 40 years, beginning in 1987 as an assistant chief accountant. He returned as a consultant in accounting for several departments in 2011, Easy to forget that we produce history every day,” he said. •
U. of I. professor wrote the book of love

By Phyllis Picklesimer
ACES News and Public Affairs

Shakespeare had it right, of course: The course of true love never has run smooth. But with the publication of “The Developmental Course of Romantic Relationships,” people who are baffled by love and its mysteries have a new source of wisdom.

“If you want to know why you can’t resist a new romance even though you’re still recovering from your last bad breakup; need some tips on keeping your relationship healthy; could use some insight into jealousy or abuse; wonder if you should move in together; or would like to understand how and why love sometimes ends, this book covers it all,” said Brian G. Ogolsky, a U. of I. professor of human and community development.

It also is the first book to give generous attention to same-sex couples, exploring the similarities and differences between the experiences of gay and straight partners.

Ogolsky wrote the book with Sally A. Lloyd, of Miami University, and Rodney M. Cate, of the University of Arizona. The U. of I. researcher’s focus is relationship maintenance and commitment. Lloyd is an expert on violence against women by their partners; Cate studies the development of premarital relationships and sexual behavior in romantic relationships.

Ogolsky hopes the book will be used in family studies, social work, psychology and counseling classes, but “almost anyone who’s interested in the subject can pick the book up and get something out of it,” he said.

For instance, why, after a devastating breakup, do so many people go right out and start again? Two reasons, Ogolsky said.

“One, we’re extremely social animals, and we’re definitely motivated by the excitement that comes with a new relationship. Two, we’re fundamentally irrational creatures. We have a hard time closing doors and leaving them shut.”

The expert said that whenever there’s a barrier to leaving a relationship – a legal commitment, children or financial constraints – people are more likely to stick with their partner. For that reason, increased legalization of same-sex marriage makes it more likely that married gay and lesbian couples will stay together.

“That doesn’t mean people will continue to stay when there are serious problems. But they will take these ‘barriers’ into consideration before splitting up,” he said.

And no up-to-date book on romantic relationships would be complete without sections on online dating sites and cohabitation, he said.

“Online dating has led to a broadening of the kinds of relationships that are acceptable, he said. “Serial monogamy, or moving from one person to another with little time in between, is one new phenomenon because we have the ability to meet people very quickly and to customize our relationships. It’s not a better way of dating, it’s just a different way.”

Finally, will living together lead to a successful long-term relationship? “Depends on whether you’re sliding or deciding,” he said. “Research shows that people who slide into cohabitation – those who just start spending more nights together or slowly move more personal items in – fare worse than couples who actually think it through and decide to live together as part of a serious commitment.”

The book was published by Routledge Academic.
Researchers report that they have determined the precise chemical structure of the HIV capsid, a protein shell that protects the virus’s genetic material and is a key to its virulence. The capsid has become an attractive target for the development of new antiretroviral drugs.

The report appears in the journal Nature. Scientists have long sought to understand how the HIV capsid is constructed, and many studies have chipped away at its mystery. Researchers have used a variety of laboratory techniques – cryo-electron microscopy, cryo-EM tomography, nuclear magnetic resonance spectroscopy and X-ray crystallography, to name a few – to peer at individual parts of the capsid in revealing detail, or to get a sense of the whole.

Until the arrival of petascale supercomputers, however, no one could piece together the entire HIV capsid – an assemblage of more than 1,300 identical proteins – in atomic-level detail. The simulations that added the missing pieces to the puzzle were conducted during testing of Blue Waters, a new supercomputer at the National Center for Supercomputing Applications at the U. of I.

“This is a big structure, one of the biggest structures ever solved,” said U. of I. physics professor Klaus Schulten, who, with postdoctoral researcher Juan R. Perilla and their colleagues used experimental data and computer simulations to determine the chemical structure of the HIV capsid.

“The work of matching the overall capsid, made of 64 million atoms, to the diverse experimental data can only be done through computer simulation using a methodology we have developed called molecular dynamics,” Schulten said. “You basically simulate the physical characteristics and behavior of large biological molecules but you also incorporate the data into the simulation so that the model actually drives itself toward agreement with the data.”

The simulations revealed that the HIV capsid contained 216 protein hexagons and 12 protein pentagons arranged just as the experimental data had indicated. The proteins that composed these pentagons and hexagons were all identical, and yet the angles of attachment between them varied from one region of the capsid to another.

“That is really the mystery of it,” Schulten said. “How can a single type of protein form something as varied as this thing? The protein has to be inherently flexible.”

The pentagons “induced acute surface curvature,” the researchers reported, allowing the capsid to be a closed structure that would not have been possible if the capsid were composed only of hexagons.

Possessing a chemically detailed structure of the HIV capsid will allow researchers to further investigate how it functions, with implications for pharmacological interventions to disrupt that function, Schulten said.

“The HIV capsid has actually two completely opposite properties,” he said. “It has to protect the genetic material but once it gets into the cell it has to release the genetic material. That has to happen with really good timing – too quick is not good, too slow is not good. And this is a moment when you can throw a wrench into the system.”

Some of the most potent antiviral drugs target the viral capsid, Schulten said.

“The timing of the opening of the capsid is essential for the degree of virulence of the virus,” he said. “This is where we could perhaps best interfere with HIV infection.”

The computational research was carried out at the U. of I. Beckman Institute. The National Institute of General Medical Sciences at the National Institutes of Health and the National Science Foundation supported this research. The Blue Waters supercomputer is funded by the National Science Foundation.
Does the court’s ruling in the case (Bowman v. Monsanto Co.) open the door for other types of agricultural lawsuits? I don’t think so. The ruling was very narrow on the law itself, and the farmer, Vernon Hugh Bowman, had a very weak case, which was why it was a 9-0 opinion in favor of Monsanto. Everyone pretty much knew that Monsanto was going to win, and it seems like Bowman himself knew that he was exploiting a loophole.

Really, Bowman’s argument about the first-sale doctrine was weak. The court is correct in that the first-sale doctrine is about obtaining something legally and then having the right to transfer it to somebody else afterward. So, Bowman could have bought these seeds and sold them to someone else. He also could have given them away for free or burned them. The first-sale doctrine lets you do what you want with what you’ve purchased but it doesn’t let you make more of whatever you originally bought.

How did this case threaten the “incentive for invention” aspect of patent law?

There’s an interesting section in the court’s opinion that’s a policy discussion, and it’s clear that the court is of the opinion that these patents would be essentially worthless if people could take advantage of a self-replicating loophole like Bowman did. The court may be right, but in 1970 Congress passed non-patent protection for seeds under the Plant Variety Protection Act and included a seed-saving provision for farmers. At least at that time, Congress didn’t think that seed saving would destroy incentives to invent new seeds.

Another interesting aspect of this case that has received very little attention is that the seeds go “off-patent” – meaning this technology falls into the public domain – this October. In other words, Monsanto completely loses its patent on these seeds, which means that anybody in the country would be able to make them – and what Bowman did would be completely legal beginning this fall.

What’s also interesting is, after the seed becomes part of the public domain, will we see competition from generic seed manufacturers? We see that sort of action in the pharmaceuticals industry – as soon as a certain drug goes off-patent, the generic manufacturers jump in as quickly as they can. So there’s an opportunity for real competition here, and it will be interesting to see if and how fast that develops.

Seed companies will sometimes play games to make it appear that you have to buy the patented product when, in fact, the generic version would be just as good. If this were truly a competitive market, there would be generic competitors out there, and there wouldn’t be any negative pricing effects from that game-playing.

But Monsanto is a very aggressive company with a lot of detractors – some have good points, while others are a little hysterical. So it’s always been hard to evaluate the claim that they are able to charge monopoly prices for newly patented seeds that aren’t really better than the old seeds.

In an efficient market, that strategy should not work. But it may not be an efficient market, especially if you only have a handful of major players. If the major players completely dominate the seed market, they may be able to get away with it.

This case was ostensibly about soybean seeds, but what implications do you foresee it having for other so-called “self-replicating technologies”?

The broader implications of this case do indeed have to do with self-replicating technologies, and whether or not they should be protectable. But the problem here is that this particular technology is not self-replicating. It does take the interference of man to plant and water seeds. There are, indeed, different types of technologies that are truly self-replicating – strains of bacteria, that sort of thing. Things that will propagate without direct human intervention. But soybean seeds aren’t one of them.
Computer research project shows shift in English language

Ted Underwood, an English professor, says he “stumbled over the surprising linguistic divide between literary and nonliterary prose through data mining.

Literary history

Underwood recently wrapped up a research project involving more than 4,200 books. Since that work revealed dramatic shifts in the English language between the 18th and 19th centuries, he’s now expanding his research to include more than 470,000 books—almost every English language book written during that era and preserved in a university library.

How did he find time to read 4,000 books, let alone 400,000? He hadn’t, of course. Underwood, who teaches 18th- and 19th-century literature, worked with the U. of I.’s Institute for Computing in Humanities, Arts and Social Science (I-CHASS) and the HathiTrust Research Center (a collaboration of the U. of I. and Indiana University) to develop computer programs to crawl through digitized copies of the books, counting words and sorting genres.

Underwood’s data mining venture has already yielded some gems. “I’m finding that there are big patterns to be discovered in literary history at that scale,” he said. “We just hadn’t been able to back up far enough to see it.”

He initially set out simply to confirm his hunch that the English language acquired a bit of starchiness around 1800. “There’s a very Latinate diction that sets in around that time,” he said. “I had a vague sense that the language of literature became more formal. For example, you no longer ‘need’ something; you ‘require’ it.”

Using data from Google Books to find the 10,000 words used most frequently in 18th- and 19th-century books (not counting determiners, prepositions, conjunctions and pronouns), he classified the etymology of those 10,000 words, sorted them by the date of entry into the English language, and divided them into two groups—pre- and post-Norman Conquest.

In the 1066 invasion made French the official language of Britain, used (along with Latin) for all written business and spoken language between the 18th and 19th centuries. “I don’t mean ‘formal’; I mean the simplest vocabulary.”

In a sense, poetry became more sophisticated around 1800, “however, the result was surprisingly profound. While the language of nonfiction works indeed became more formal, the language of fiction, drama and especially poetry became more formal until about 1775, and then reversed course and increasingly relied on less-formal, pre-Norman Conquest words.

By 1899, Old English words occurred in drama and fiction at a rate more than 1 ½ times higher than in nonfiction, according to Underwood’s data. In poetry, the rate was almost three times higher.

This large shift coincides with the advent of the style of writing we now think of as literature—writing that’s set apart by its imaginative intention. “If you go back to 1700, literature basically means anything written—just literacy, actually. Our concept of literature as fictive and aesthetic really emerges in the late 18th century,” Underwood said.

I think the most important result I stumbled upon was how literary genres changed from nonliterary prose.”

In an article titled “The Emergence of Literary Diction,” published in the Journal of Digital Humanities, Underwood and co-author Jordan Sellers, a U. of I. graduate student, explained their discovery and theorized about why literature—considered to be the most artistic form of writing—adopted the simplest vocabulary.

In a sense, poetry became more specialized than it had been before: Its diction became more remote from prose. But it specialized in the direction of old words that would appear plain, common and universal,” they wrote.

Underwood suspects that “literature” as we know it evolved into a vehicle for expressing individual experience, leaving nonfiction writers to analyze abstract ideas and social structures. “In my view, the decreasing formality of literary language was a side effect of this emphasis on the elemental and the personal,” he said.

This research will be included in his book, “Why Literary Periods Mattered: Historical and the personal,” he said.

Combining that skill with his passion for literature comes naturally to the English professor, but he realizes it may not come so easily to his colleagues. “What I’m trying to do now is create tools that will make it easier for other researchers to use this bigger collection,” he said.

He shares his data, his processes and his programs through his blog, The Stone and the Shell (tedunderwood.com), which takes its name from Wordsworth’s epic poem, “The Prelude,” in which a shell seems to represent poetry, and a stone represents mathematics. •
The Sundance Award-winning documentary “Love Free or Die” features Cat视频 Media’s featured Community Cinema film for June. The film, from the PBS program “Independent Lens,” tells the story of Gene Robinson, the first openly gay person to be elected bishop in the high church traditions of the Episcopal Church, where Robinson plays an instrumental role in establishing the full inclusion of LGBT people.

Robinson’s 2003 elevation in the New Hampshire diocese ignited a worldwide firestorm in the Anglican Communion that has threatened schism. In the face of it all, Robinson confronts those who use religion as a means of oppression and underestimates the students who want to see them as more than property, raw materials or tools and accept them as equals and the show’s organizer, says: “It’s important to delve and investigate what animals do and give them the same respect as we give people. A good example is child care. While we acknowledge that it’s a job for parents and caregivers, when a mother pig is caring for her piglets, the way they behave is not necessarily qualifying it the same way as we would for a person.”

The exhibition will feature the work of several artists from the university’s MFA program. Materials range from taxidermy to metal to wood.

The show will be on display June 7-28. The reception for both free concerts open to the public in the Music Building auditorium (Room 2100).

The concerts: 7:30 p.m. June 6, opening concert, noon and 7:30 p.m. June 7, recitals; 2 p.m. June 8, youth talent concert; and 7 p.m. June 8, participants recital.

The opening concert will include classical music by Andrew Glendening, conducted by Duke Ellington, Macy Gray, Astor Piazzolla and Robert Smith. The opening artists will be Chen-Yu Huang (2010 Kranert Debut Artist) and Julius Hazin, percussion. In addition to his performance in the Midwest, concluding with the participants’ recital, featur- ing the world premiere of “one time around,” by Jamie- son, for multiple harps.

More details on performers and programming can be found at music.illinois.edu.

Documentary explores Raggedy Ann

In June 2009, hundreds of people descended on the Cen- tral Illinois town of Arcola to attend the Raggedy Ann and Andy Festival and to bid farewell to Arcola’s Raggedy Ann and Andy Museum. The museum’s collection was about to be moved to a new home in the National Museum of Play in Rochester, N.Y.

The 2009 festival provides the backdrop for a new doc- umentary about Raggedy Ann and Andy and their creator, il- lustrator Johnny Gruelle. For more than 20 years, dedicated fans from all over the world made the pilgrimage to Arcola to honor the legacy of the cultural icons.

The documentary, “Raggedy: The Magical Legacy of Johnny Gruelle,” will be broadcast at 8:15 p.m. June 6 on WILL-TV. The film brings to light little-known stories and facts surrounding the sibling dolls that came to be loved by millions. The program includes interviews with Johnny Gruelle’s granddaughter, Joni Gruelle Wannamaker, and her husband, Tom, who operated the Arcola museum. Gruelle family photographs and nostalgic stories help bring the panorama to life.

As cameras roll, fans gather at the museum to share their stories and feelings about the end of an era with the closing of the museum. The broadcast of the documentary coincides with Arcola’s Raggedy Ann festival June 7-8, a meeting of Raggedy enthusiasts from around the country, which has taken the place of the larger festival of years past.

North Carolina filmmaker Rob Hill produced the docu- mentary as an offshoot of a video project to film a Japanese tour group. “I was documenting the group visiting the mu- seum before a close friend of mine,” he said. “I realized that this was a great opportunity to tell the larger story about the history of Raggedy Ann and Andy and the Gruelle family.”

The Gruelles’ proposal, brought in English and Russian, was one of three entries submitted by the Illinois Department of Corrections. In addition to the Gruelles’ proposal, the Illinois Department of Corrections and other Illinois state agencies co-sponsored a community film for June.

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safely from anesthesia.

When horses are lying on their sides for surgery, their large intestinal tracts can compress their lungs, making it difficult for them to breathe.

Horses also are at great risk when they’re awakening from general anesthesia because their strong “fight or flight” instinct compels them to stand up right away even though they may be disoriented, weak and ataxic, or imbalanced.

About 1 percent of horses sustain serious injuries, such as skull or leg fractures, during falls that occur while they’re awakening from anesthesia, Clark-Price said.

In Clark-Price’s research project, he and his colleagues attach tri-axis accelerometers to surcingles that wrap around the horses’ chests and hold the devices in place. The data are later uploaded to a computer and compared to a statistical model that rates each horse’s recovery on a 0-100 scale, based upon the amount of difficulty the horse had getting up.

“Until now, veterinarians evaluated equine patients’ recoveries by viewing videotapes of the horses and assigning scores, but that method can be subjective and arbitrary,” Clark-Price said.

Using accelerometers and the statistical model “takes the human element out of it altogether,” Clark-Price said. “It’s a completely objective way of gathering data on their recovery.”

Clark-Price also is exploring the use of short-acting medications to calm or sedate horses until inhalant anesthesia wears off, so that horses are more alert and coordinated when they attempt to stand up.

“One drug that has a lot of promise at smoothing out horses’ recoveries is propofol,” a short-acting hypnotic agent used to induce or maintain anesthesia in humans and which singer Michael Jackson reportedly abused as a sleep-agent, Clark-Price said.

“Horses also are at great risk when they come out of the anesthesia.

Horses are unable to stand again if they lie for extended periods of time, their body weight can crush blood vessels, cutting off blood flow to their muscles and causing those muscles to begin to die. If that occurs, horses are unable to stand again after surgery. Verteranis at Cornell University. The universities of Florida, Georgia and Tennessee, and Virginia Tech are collaborating on the project.

Clark-Price also is exploring the use of accelerometers to monitor horses’ movements as they awaken from anesthesia and to develop protocols that minimize risks of injury.

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