

**LAS**

**NEWS**

COLLEGE OF LIBERAL ARTS & SCIENCES | SPRING 2017

# The next 150 years



WHAT IS THE FUTURE OF THE  
LIBERAL ARTS AND SCIENCES?

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*On the cover: A view of the Quad from the Illini Union. Photo by L. Brian Stauffer.*



## GREETINGS FROM THE College of Liberal Arts & Sciences

Dear alumni and friends,

This year we celebrate the Sesquicentennial of our great university. For 150 years, our campus has delivered on the land-grant promise upon which our university was founded. While the College of LAS didn't officially form until 1913, our disciplines have been at the core of the university since the very beginning.

January marked the start of my tenure as dean of LAS. How wonderful that my opportunity to serve begins with our Sesquicentennial. As I reflect on the past and envision the future of the liberal arts and sciences, I could not be more excited about what lies ahead.

While employer needs change, the demand for graduates educated in the liberal arts and sciences remains strong. Our students, while gaining an incredible depth of knowledge in their chosen area of study, also benefit from an extraordinary breadth of opportunities. Many choose to double major or minor in one of our 70 areas of study; some enhance their degrees by pursuing a certificate, undergraduate research, or an internship. All of our graduates go into the world with an education that feeds their curiosity, encourages them to ask questions, and creates an appreciation for different viewpoints.

We believe wholeheartedly when we tell students that they are more than their major, just as we believe that the College of Liberal Arts & Sciences and its vast array of programs are much greater together than the sum of their individual parts. This is where people and ideas come together from many corners of inquiry to make sense of the world around us.

The College of LAS is poised for another 150 years of academic excellence at the center of our campus. Read on for sage thoughts from our insightful faculty on the future of disciplines across our college.

With my best wishes,

**Feng Sheng Hu,**  
Harry E. Preble Dean

**Editor**  
Dave Evensen

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### Social and Behavioral Science Research Initiative creates campus infrastructure for collaboration



The new Social and Behavioral Science Research Initiative is making possible more collaboration among the many academic units at Illinois that house social and behavioral scientists. **Brent Roberts**, professor of psychology, leads the initiative, which was started through the Office of the Vice Chancellor for Research. SBSRI will make it easier for experts to share information and collaborate on projects. ■



**Highly motivated:** Sophomore Tessa Muriello, who is among the first group of students to receive Access and Achievement Program summer research fellowships in animal biology, tracks prairie chickens using radio telemetry. (Photo courtesy of Tessa Muriello.) ■

### Six LAS faculty members rank among world's most influential

Eight University of Illinois researchers, including six from the College of Liberal Arts & Sciences, have been named to the Clarivate Analytics Highly Cited Researchers list for 2016. The list identifies scientists whose research has had significant global impact in their respective fields. The LAS faculty include **Lisa Ainsworth** (plant biology), **Stephen P. Long** (plant biology), **Yi Lu** (chemistry), **Catherine Murphy** (chemistry), **Donald Ort** (plant biology), and **Brent Roberts** (psychology). ■

### Psychologists challenge industry claims on brain-training benefits



A review of scientific studies cited by brain-training companies has found no evidence to support claims that their products improve cognition. **Daniel Simons**, professor of psychology, led the study with Illinois educational psychology professor **Elizabeth Stine-Morrow**. They found that while people improve on tasks they practice, it's premature to conclude that computerized brain-training programs yield broader cognitive benefits. ■



**Riders with a cause:** The Illini 4000 cross-country cycling group stops at the Alma Mater in Champaign in June. The student-run, nonprofit foundation's members bike from New York City to San Francisco each summer to raise money for cancer research. ■

### Illinois revises core curriculum to add course in U.S. minority culture



Illinois has added a course in U.S. minority culture to the core undergraduate curriculum, effective in fall 2018. "This discussion about undergraduate education is another manifestation of how we adjust our curriculum to encompass concerns society brings up," said **Ronald Bailey**, head of the Department of African American Studies and chairman of the Committee on Race and Ethnicity. ■



**Positive reactions:** Renovated, state-of-the-art lab spaces in the recently reopened **Chem Annex** will provide students space and equipment to master chemistry skills. Nearby, the renovated **Natural History Building** is just months away from reopening. ■

### Researchers seek solutions for gerrymandering with supercomputer



**Wendy K. Tam Cho**, professor of political science, and **Yan Y. Liu**, a senior research programmer in the Department of Geography and Geographic Information Science's CyberInfrastructure & Geospatial Information Laboratory, are using Illinois' Blue Waters supercomputer to combat gerrymandering. They developed an algorithm to create 800 million maps that satisfy specified criteria and won first place in the Common Cause 2016 First Amendment Gerrymander Standard Writing Competition. ■



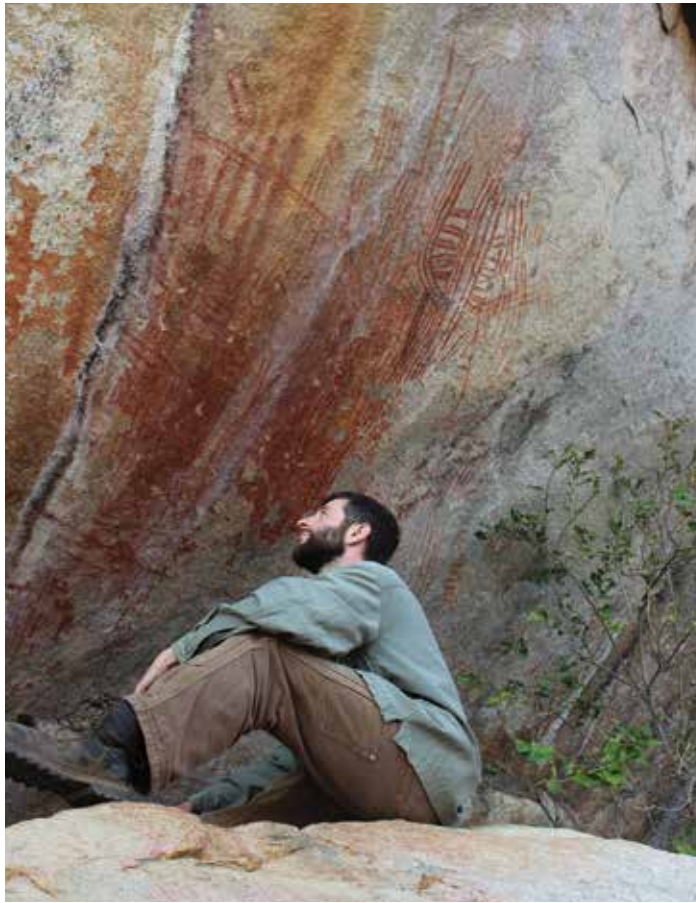
**Shivaliben "Shivali" Bhargavkumar Patel**, center, poses alongside Illinois Gov. Bruce Rauner last fall as she receives the Lincoln Academy Student Laureate Award, one of the state's highest honors for university students. She was recognized for her excellence in curricular activities and work to help those in need. (Photo courtesy of the Office of the Governor.) ■

### Professor setting the record straight on the writings of a 17th century traveler

**Craig Koslofsky**, professor of history, received a \$75,000 grant to translate the travel account of Johann Peter Oettinger, written in 1682-1696. An inaccurate edition of Oettinger's story was published in 1885-86. It deliberately misrepresented Oettinger's experience to support racial stereotypes. With the assistance of the NEH grant in Scholarly Editions and Translations, Koslofsky will provide an annotated account to scholars worldwide. ■



**Lifftoff:** New LAS students pile into the Krannert Center for Illinois' LAS Lifftoff event that welcomed freshmen at the start of the 2016-17 school year. ■



**Andrew Zipkin** examines ochre rock art at Mwanambavi Hill, Malawi. As a National Science Foundation postdoctoral fellow of anthropology, Zipkin studies pigments used in cave and wall paintings. (Photo courtesy of Andrew Zipkin.) ■

### Late economics professor remembered



Family of the late **Fred Gottheil**, a beloved economics professor who died in 2016, are asking those who wish to honor his memory to consider a gift to the Josh Gottheil Memorial Fund for Lymphoma Research. The fund was founded in 1994 by Fred Gottheil in honor of his son, Josh, who passed away at age 19 in 1989 of lymphoma. Visit [joshsfund.org](http://joshsfund.org). ■

### What do the German measles tell us about Zika?



Could the Zika outbreak resemble the German measles epidemic which also caused birth defects a half century ago? **Leslie Reagan**, Illinois history professor and author of "Dangerous Pregnancies," said infected women today face the same overwhelming uncertainty regarding their potential children as they did with the measles. Unlike the early 1960s, however, there has been virtually no discussion whether abortions are appropriate in these cases. There has also been little talk of how to care for afflicted children. ■

### LEAP Scholars named



Six assistant professors have been recognized for exceptional accomplishments in teaching and research as part of a new college program to highlight and support outstanding junior faculty. Recipients of the Lincoln Excellence

for Assistant Professors Award include **Ikuko Asaka**, history; **Stephen Chaudoin**, political science; **Alison Fout**, chemistry; **Daniel Hyde**, psychology; **Lijun Liu**, geology; and **Darren Tanner**, linguistics. For more about each scholar, visit [go.las.illinois.edu/LEAPScholars](http://go.las.illinois.edu/LEAPScholars). ■



**Robert Carr** (BS, '66; MS, '67; mathematics) poses with **Chancellor Robert Jones** after presenting a check for \$1 million to provide scholarships to fully fund 50 academically driven students of modest means at Illinois. The donation comes through Carr's Give Something Back Foundation. ■



**Dinner with Tony:** LAS alumni enjoyed dinner and an interactive cooking experience with award-winning chef Tony Mantuano at his new restaurant, River Roast in Chicago, in September. (Photo courtesy of Tom Rozanski, BS, '65, mathematics). ■

### Faculty invested



*Deborah Paul and Milan Bagchi*

Over the span of a few weeks last fall, three professors in LAS received professorships, one of the highest honors for faculty. **Susan Martinis** (biochemistry) received the Stephen

G. Sligar Professorship, funded by a gift from the Jenner Family Faculty Excellence Fund; **Benjamin Hankin** (psychology) was named the Fred and Ruby Kanfer Professor of Psychology, the first endowed named position in the Department of Psychology, named for the late Fred and Ruby Kanfer; and **Milan Bagchi** (molecular and integrative physiology) was named the Deborah Paul Professor of Molecular and Cellular Biology, made possible by the Deb and Tim Paul Endowment Fund. ■

### Faculty receive awards

Many faculty received prestigious honors during the summer and fall semester. A partial list includes:

- **Fellow of the American Meteorological Society:** **Greg McFarquhar** (atmospheric sciences).
- **Transformative Research Award from National Institutes of Health:** **James Morrissey** (biochemistry and cellular biology), **Chad Rienstra** (chemistry, biophysics, and computational biology), and **Emad Tajkhorshid** (biochemistry, biophysics, computational biology, and pharmacology).
- **MIT Technology Review Innovators Under 35:** **Ying Diao** (chemistry).
- **Electrochemical Society Toyota Young Investigator Fellowship:** **Joaquin Rodriguez-Lopez** (chemistry).
- **The National Academy of Engineering's annual U.S. Frontiers of Engineering symposium:** **Brendan Harley** (chemical and biomolecular engineering).
- **American Association for the Advancement of Science Fellows:** **Bruce Rhoads** (geography and geographic information science) and **Chad Rienstra** (chemistry).
- **University Scholars:** **Nicole Allen** (psychology); **Wail S. Hassan** (comparative and world literatures); **Chad Rienstra** (chemistry); **Rebecca Stumpf** (anthropology). ■



**Orange and blue morning:** An aptly colored sunrise brightens the scene outside of the Foreign Languages Building. ■



**Growing minds:** U of I entomology students Alexander Hazel and Margaret Thairu, second and third from left, pose with museum officials after receiving the Chancellor's Public Engagement Student Fellows grant to create a butterfly garden at the Orpheum Children's Science Museum in Champaign. ■

### A performance for the (Middle) Ages



**Carol Symes**, a professor of history and medieval studies, wants the Middle Ages remembered for something other than famine and disease. That's a big reason why she has translated three medieval dramas from Latin or Old French to English. Her translation of "The Play of Adam" was performed at the Metropolitan Museum of Art in Manhattan, New York, last December. ■

### U of I receives \$1.2 million to support graduate students in biological sciences



The **Department of Plant Biology** and the **School of Integrative Biology** will receive an estimated \$1.2 million from the U.S. Department of Education's Graduate Assistance in Areas of National Need program. The university intends to assist excellent graduate students from traditionally underrepresented minority groups. **Stephen R. Downie**, professor of plant biology, is directing the program. ■

### Is academia waking up to the problem of sexual harassment?



Anthropology professor **Kathryn Clancy** joined a federal legislative effort to curtail sexual discrimination on campuses. Clancy said people have responded to a July 2014 survey she was involved in that revealed sexual harassment and assault occurrences in scientific field sites. "Many people have completely changed how they conduct their field work, and many field stations have overhauled their policies and codes, and have even developed bystander trainings," she said. ■

### Sociology student wins Marshall Scholarship



**Devin Weiss**, senior in sociology from Northbrook, Illinois, has been named a Marshall Scholar. The scholarship fully funds outstanding young Americans for two years of graduate study in any field at a United Kingdom institution. With a career goal of advocating for women around the world, Weiss

plans to earn a master's degree in gender, violence, and conflict. ■

### Alumnus named a disruptor—in a good way

Palantir Technologies, a Silicon Valley firm co-founded by **Nathan Gettings** (BA, '98, mathematics), has been included on CNBC's Disruptor 50 list for 2016. The list is reserved for companies whose innovations are revolutionizing the business landscape. Palantir, No. 4 on the list, sells software to the U.S. government, Wall Street firms, and others that mines massive data sets for intelligence and law enforcement applications. ■



Illinois students and alumni, including several from LAS, competed in the **2016 Summer Paralympics in Rio** in events such as track and field, wheelchair basketball, rugby, and more. ■

### New scholarship program in mathematics is a success



*Scholarship recipients Lucas Trojanowski and Clara Yam in front of Altgeld Hall.*

The **Department of Mathematics** recently restructured its scholarship program to help elite math students choose Illinois. The department offered four-year scholarships at \$6,000 per year to high-achieving students. This resulted in a record-setting 28 percent scholarship yield rate—the percentage of students who accept a scholarship and agree to attend—which is considered excellent in terms of recruiting students who are at the top of their class. ■

### Reexamining biodiversity



The so-called latitudinal diversity gradient holds that biodiversity decreases from the equator to higher latitudes. But a new study of North American fossils by animal biology professor **Jonathan Marcot** suggests that the modern gradient is the exception rather than the rule. "Things that you find mostly in southern latitudes today, we had in northern latitudes (for millions of years) as well," he said. ■

### Scientists tweak photosynthesis to boost crop yield

Researchers at the U of I report that they can increase plant productivity by boosting levels of three proteins involved in photosynthesis. The scientists, led by plant biology professor **Stephen P. Long**, saw increases of 14 to 20 percent in the growth of their modified tobacco plants. The work confirms that photosynthesis can be made more efficient to increase plant yield, a hypothesis some in the scientific community once doubted was possible. ■



# UNEXPECTED JOURNEYS

Pivotal moments in the lives of the 2016 LAS alumni award winners propelled them to inspiring accomplishments.

**Editor's note:** The following alumni were honored during the 2016 LAS Homecoming celebrations. To read their full profiles, please visit [go.las.illinois.edu/alumniawards16](http://go.las.illinois.edu/alumniawards16).

## DORIS DERBY, MA '75; PHD '80; ANTHROPOLOGY LAS Alumni Achievement Award



When Doris Derby was watching the news in 1963, she saw police attacking civil rights protestors in the South, using billy clubs, dogs, and fire hoses. Those images convinced her to move from New York City to Jackson, Mississippi, where she participated in many dramatic and dangerous moments of the civil rights movement. She also used her visual art, especially photography, to document what was happening.

Her master's and PhD in anthropology at Illinois then launched her academic career. But through it all, she was most impressed by the extraordinary courage of ordinary people.

## SHARON MOSHER, BS, '73; PHD, '78; GEOLOGY LAS Alumni Achievement Award



Prior to family vacations as a child, Sharon Mosher would map the route, figuring out stops where she and her older sister could find rocks.

Today, Mosher still hunts for rocks—only she is now dean at the acclaimed Jackson School of Geosciences at the University of Texas at Austin.

In addition to leading Jackson, and her renowned research on mountain formation, Mosher was president of two major geological societies and chaired the Council of Scientific Society Presidents. She also started GeoScienceWorld, one of the first aggregations of journal articles in any scientific field.

## LAURA NIKLASON, BS, '83, PHYSICS; BA, '83, BIOPHYSICS

### LAS Alumni Achievement Award



Laura Niklason decided to grow blood vessels in the lab after seeing the great need for replacement vessels in heart bypass surgery.

She created a prototype engineered blood vessel in 1997, and in 2012 an advanced version was used successfully in the first dialysis patient.

The FDA has fast-tracked the engineered blood vessel, moving it into Phase 3 human clinical trials.

Niklason is also working to grow new lungs in the lab. As she put it, "We are on the cusp of what I think is going to be a permanent change in medicine."

## ELIZABETH PIEROTH, BS, '88, PSYCHOLOGY LAS Alumni Achievement Award



Elizabeth Pieroth jokes that she is not gifted athletically. But when it comes to protecting an athlete's most important body part—the head—she is the go-to person.

Pieroth is the concussion specialist for several professional sports teams. She is also associate director of the sports concussion program in the NorthShore University HealthSystem. She created "A Step aHead," an award-winning joint education program with the Chicago Blackhawks, Athletico, the Amateur Hockey Association of Illinois, and NorthShore.

Her two young boys continue to play sports. The fear of concussions, she said, should not stop any child from being active.

## JAMES SPUDICH, BS, '63, CHEMISTRY LAS Alumni Achievement Award



They're called molecular motors, the tiny powerhouses responsible for movement at the cellular level. James Spudich has unraveled some of their key mysteries.

He proved that out of the 5,000 or so proteins in a cell, you only needed two—actin and myosin—to create the equivalent of a muscle contraction. That finding influences every scientist who studies molecular motors.

In another breakthrough, Spudich's team at Stanford University helped open the field of single molecule biology. Spudich also co-founded Bio-X, a major interdisciplinary research lab, and he founded two companies with drugs in late-stage clinical trials.

## DEBORAH PAUL, MS, '79, BIOLOGY LAS Dean's Quadrangle Award



A mysterious ailment struck Deborah Paul's younger brother, Tim, in 1982. Doctors determined the problem was caused by AIDS, and in 1985, he passed away at the age of 28.

One year later, Deborah Paul became the first person to develop a test that detected HIV, the virus behind AIDS, in the blood. The test was used by Abbott Laboratories to develop Norvir, the first protease inhibitor to target the HIV virus.

In memory of Tim, Paul has established the Deb and Tim Paul Endowment Fund to support University of Illinois work in infectious disease and immunology. ■

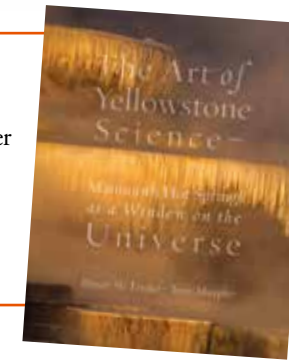
By Doug Peterson



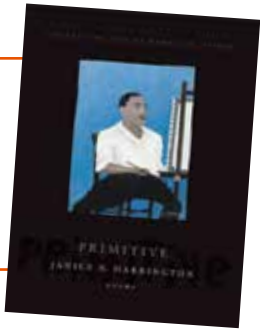
# Books from LAS

Faculty showcased their work in a variety of books in 2016. Here are a few reads that might interest you:

**"The Art of Yellowstone Science,"** by **Bruce Fouke**, professor of geology, and photographer Tom Murphy, which illustrates the beauty surrounding Fouke's research at Yellowstone. (Image courtesy of Crystal Creek Press.)



**"Primitive: The Art and Life of Horace H. Pippin,"** by **Janice Harrington**, professor of English, inspired by early 20th century painter Horace Pippin. (Image courtesy of BOA Editions.)



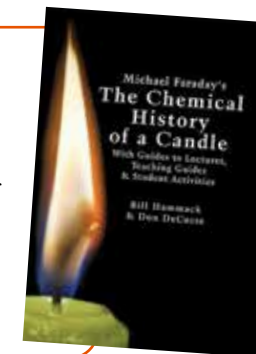
**"Remembering Akbar: Inside the Iranian Revolution,"** a novelistic memoir by **Behrooz Ghamari-Tabrizi**, professor of history and sociology, in which he reflects on three years he spent on death row in the early 1980s in Tehran's infamous Evin prison. (Image courtesy of OR Books.)



**"Not Straight, Not White: Black Gay Men from the March on Washington to the AIDS Crisis,"** by **Kevin Mumford**, professor of history, who set out to reclaim a history that he said has been washed over. (Image courtesy of University of North Carolina Press.)



**"Michael Faraday's The Chemical History of a Candle,"** by **Bill Hammack**, professor of chemical and biomolecular engineering, and **Don DeCoste**, instructor in the Department of Chemistry who wrote a new companion book to the YouTube series on The Chemical History of a Candle. (Image courtesy of Articulate Noise Books.)



**"Rightlessness: Testimony and Redress in U.S. Prison Camps since World War II,"** by **Naomi Paik**, professor of Asian American studies, which examines U.S. detention of three groups at different times in history. (Image courtesy of University of North Carolina Press.)



**"The University of Illinois: Engine of Innovation,"** edited by **Frederick E. Hoxie**, professor of history, with its release timed to correspond with the U of I's sesquicentennial in February 2017. The book includes essays by writers from around campus who candidly explore the university's accomplishments, legacy, successes, and setbacks. (Image courtesy of University of Illinois Press.)



**"Pious Irreverence: Confronting God in Rabbinic Judaism,"** by **Dov Weiss**, professor of religion, in what's called the first comprehensive academic look at the Jewish tradition of protest and of expressing doubt about and frustration with God. (Image courtesy of University of Pennsylvania Press.) ■



# Hunting for the invisible traces of crime

## LAS alumna serves as a forensic scientist in Las Vegas



Image courtesy of Khushboo Narechania.

There's crime scene investigation as portrayed by television shows such as CSI, and then there's crime scene investigation as described by **Khushboo Narechania**, a police forensic scientist.

**Job title:** Forensic scientist, Chemistry Detail and Clandestine Laboratory Team, Las Vegas Metropolitan Police Department

**Degree:** BS, biology, '03 (with a minor in chemistry)

**What is a typical workday like?:**

Contrary to the popular Hollywood shows, my job entails sitting in the laboratory the majority of the time testing evidence samples. We are also regularly called to testify in district and federal court regarding our analyses. The best part of the job, however, is that we in the Chemistry Detail are also members of the Clandestine Laboratory Team, which means that we are the only section in the laboratory that responds to crime scenes. We respond to scenes where there is reason to believe that someone is manufacturing controlled substances in order to help assess the chemical hazards at the scene, determine what they are attempting to manufacture, collect relevant samples, and assist in the safe disposal and clean-up.

**How have crime shows affected your work?:**

The shows do make it seem like test results come back within minutes, and all cases get solved within an hour (one case typically takes several weeks to complete). It makes it challenging during testimony because the jury sometimes thinks that if you didn't find/identify anything (or "match" the prints to someone, or identify the DNA profile, etc.), that you didn't do your job properly. The assumption is that the evidence is always there, but sometimes the evidence just isn't there to find.

**How did your studies prepare you for your career?:**

Officially declaring and completing the chemistry minor track might have been one of the best decisions I made. My entire job revolves around chemistry. I can't tell you how many times I have referred back to my undergraduate organic chemistry textbooks to brush up on key concepts that I now utilize every day. ■

Read more LAS@Work features at [go.las.illinois.edu/LASatWork](http://go.las.illinois.edu/LASatWork).



# Scientists find link between tropical storms and decline of river deltas

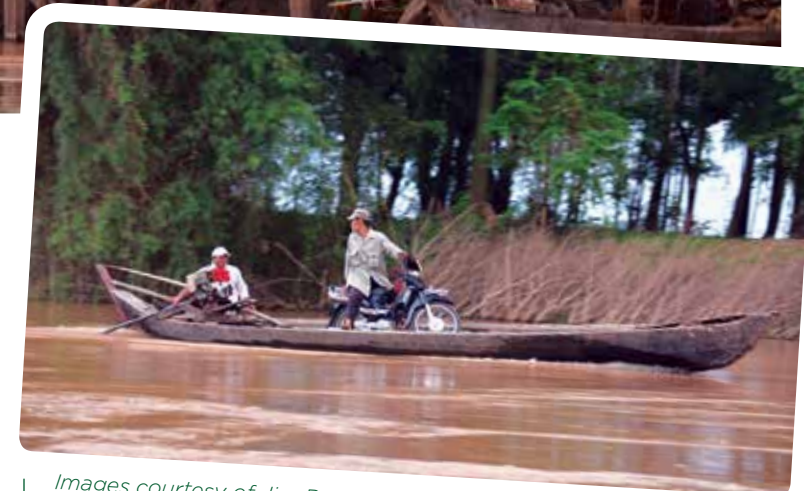
## A study published in Nature reveals the threat posed by changing weather patterns

Rivers are notoriously hard to study over long time periods. An international research team, however, has used new techniques, data, and methodology to reveal the threat posed by changing storm patterns to river deltas around the world.

**Jim Best**, the Jack and Richard Threet Professor of Sedimentary Geology at Illinois, studied the Mekong River in Cambodia and Vietnam, the world's third largest river delta and home to 20 million people. The study, published in the journal *Nature*, found that changes in the behavior of cyclones are starving the delta of sediment that is necessary to guard against flooding.

Deltas are landforms generated by sediment that has been washed into rivers and carried downstream. This sediment builds up where the river meets slow moving or still water, such as oceans or lakes, and a constant flow of new deposits is vital to offset natural changes and prevent potentially disastrous flooding.

"We show that tropical cyclones provide the driving force for supplying about one third of the supply of suspended sediment to the delta," said Best, a faculty member in the departments of Geology and Geography & Geographic Information Science. "In addition, if, as some present models show, cyclone tracks will shift under a changing climate, these cyclone-driven yields of suspended sediment may decline further."



Images courtesy of Jim Best.

The research team, which also included researchers from the universities of Southampton (United Kingdom), Exeter (U.K.), Hull (U.K.), and Aalto University (Finland), developed a new method of analyzing archived measurements of water and sediment discharge in the Mekong River to detect sediment concentration dating back over two decades (1981-2005). They were able to isolate the impact of changes in tropical storms on the river's sediment load, apart from human influences such as sand mining and damming.

"Understanding and predicting the quantity of sediment such great rivers supply to their deltas is of great societal importance in more fully assessing the risks faced by these vulnerable coastal systems," Best said. ■

By Peter Franklin, University of Southampton, and Taylor Hoffman

# The next 150 years



WHAT IS THE FUTURE OF THE LIBERAL ARTS AND SCIENCES?

Can anyone predict the future? If someone in 1867 had asked John Milton Gregory—this institution’s visionary, founding regent—what would happen over the next 150 years, would he have even guessed that Illinois Industrial University would switch names to the University of Illinois, much less that people in 2017 would carry entire libraries of information in their jacket pocket?

So maybe it’s not fair to ask LAS professors what will happen in the liberal arts and sciences over the next 150 years. But in honor of U of I’s sesquicentennial, we asked anyway. Fortunately, not only does Illinois employ some of the best minds in academia, it also employs some of the most gracious. Here are their replies:

**Antoinette Burton**, professor of history, director, Illinois Program for Research in the Humanities

The humanities are what we make them. If we believe the humanities should be central, and if we have the will to make them so, then they will be... if our only goal was an enhanced job market for students, the humanities would be indispensable. But we also want them to be whole, well-rounded citizens.



It’s in humanities classrooms where debates can and do happen. That’s where students can arrive at a critical appreciation for American traditions and values, whether they are strong or in peril. We need this kind of humanities-based engagement now more than ever. In the coming decades... we need to take a disciplined stand—an energetic, informed, and cross-campus stand—for the central role of the humanities at Illinois.

**Jeffery Moore**, Murchison-Mallory Professor of Chemistry, interim director, Beckman Institute for Advanced Science and Technology



Will the human condition be improved, and if so, how? As I wrote the question, my eyes were drawn to the word “human.” It occurred to me that the next 150 years could see a sharp break in the evolutionary pathway of *H. sapiens*. Is this one of those singular points in time – a fork in the evolutionary road?

Until now, human evolution has been largely out of our control. Won’t that all change soon? The most obvious way is through genetic engineering. Another possibility is symbiosis with genetically modified organisms, such as an engineered microbiome that performs unconventional tasks tightly integrated with the desires and needs of its host species. A third and perhaps even more disruptive possibility is the hybridization of humans and machines. Yes, it’s more than just a little unnerving to think along these lines.

**Don Wuebbles**, Harry E. Preble Professor of Atmospheric Sciences



Risk framing applies to much of what we do, including my work (and that of others in our department) on climate change and resulting societal impacts, but also to our work on understanding the processes underlying clouds, hydrology, and severe weather, and our studies of air quality.

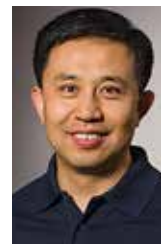
Our department connects with all parts of LAS, and will do this even more so in the future. All aspects of our society, and its connections with urbanization, land use, food security, energy development, and water availability, relate directly to the research coming out of atmospheric sciences. LAS cuts across all of these different connections. This puts LAS at the forefront of defining the future of our society.

**Jean-Philippe Mathy**, professor of French and comparative and world literature, director, School of Literatures, Cultures, and Linguistics



In addition to courses for students who major or minor in languages, national literatures and cultures, and linguistics, we need to continue to offer courses for students who are not majoring in the humanities, but are expected to be familiar with global issues. Employers are looking for students who have strong critical thinking skills and an ability to communicate well, and are knowledgeable about the world.

**Shaowen Wang**, professor of geography and geographic information science, founding director, CyberGIS Center for Advanced Digital and Spatial Studies and CyberInfrastructure and Geospatial Information Laboratory



The development and use of geographic information science and systems (GIS)—computerized approaches to capturing, managing, transforming, analyzing, and visualizing geospatial data—have grown immensely for the past several decades. This growing trend will persist into the foreseeable future enabled by rapid progress of related technologies and driven by tremendous

needs in numerous fields (e.g., agriculture, business, ecology, emergency management, environmental engineering and sciences, geography and spatial sciences, geosciences, public health, and social sciences, to name just a few).

Spatially heterogeneous and interdependent changes across the globe, such as climate change, competing land uses, environmental degradation, and population growth have posed many grand scientific and societal challenges. To tackle these challenges, as a geospatial data deluge permeates broad scientific and societal realms, requires critical thinking of interactions of spatial patterns and their driving processes across a number of spatial and temporal scales through cyberGIS approaches.

**Jonathan Inda**, chair, Department of Latina/Latino Studies



I think part of the growth in Latino studies departments and programs across the country is driven by the growth in the Latino population. Latinos are now the largest minority group in the United States. Knowledge of this group has become indispensable if students are to be engaged citizens and forward thinking leaders in today’s society. So my sense is that Latino studies as a field

will keep growing and creating more knowledge about Latinos in order to meet the need of educating the American populace.

I also think that ethnic studies programs more generally will grow. We live in an increasingly diverse society. We will need expanded ethnic studies programs in order to provide students with the skills and knowledges they need to be active and successful participants in our increasingly multi-racial, multi-cultural democracy.

**Milan Bagchi**, Deborah Paul Professor of Molecular and Cellular Biology



With its traditional core areas of strength in biochemistry, cell biology, microbiology and physiology, (the School of Molecular and Cellular Biology) promotes translational research that advances our understanding from the molecular and cellular level to human application. For example, modern genomics, in which multi-species comparisons are often conducted to understand



gene function, continues to provide insight into the evolution and function of genes and their dysfunction in disease, and holds the promise of personalized medicine in the future.

With the establishment of the new Carle-Illinois College of Medicine and an upswing in our collaborations with the bioengineering faculty on the campus, we envision developing a significant translational component in key research areas, such as molecular and systems neurobiology, metabolic health, and cancer metastasis.

**Ted Underwood**, professor of English and information sciences, LAS Centennial Scholar



Much of what we now take for granted about literary study—for instance, our focus on the close reading of individual works—has only been central for 75 or 100 years. Things could change an enormous amount in another 150 years. The meaning of the word ‘literature’ itself could change.

Imagine if artificial intelligences learn how to tell an entertaining story. It’s an achievable goal, I think less than 100 years away. The effect on human storytelling could be enormous. A special prestige might accrue to the kinds of literary effects that are still difficult for artificial intelligence to reproduce. Literary study could become fiercely divided between scholars who are using computers to understand literary history, and those who define true literary value as the thing that remains elusive and unexplained.

**Ruby Mendenhall**, professor of sociology, African American studies, urban and regional planning, and social work



How can our research create advancements that will be relevant 150 years from now for the local community and the global society? One current trend involves working with life and behavioral scientists to synthesize the research in these fields and to create new research about how social inequality gets ‘under the skin’ and negatively affects the health of people of color in U.S. society.

For decades, researchers have hypothesized that chronic stress is a critical mechanism by which the social environment results in poor health and health disparities. However, the empirical literature often lacked clear information about the biological mechanisms that link social inequality, chronic stress, and health.

Social scientists and humanists are poised to transform what we know about health and resiliency with sophisticated social determinants research about the role of cultural practices, group meaning, and resisting social injustice in promoting biological homeostasis and longevity.

**Douglas Simpson**, chair, Department of Statistics



The way people do statistical research now is quite different than how it used to be, due to the computer power and large scale of data. I’d foresee in the future that trend is going to continue. You’re not directly analyzing things anymore; you’re setting up computer programs that will analyze the data in a reproducible way.

We’re seeing statistical methods being engineered into systems (such as) search engines, like Google, and recommender systems, like Amazon recommending products... It’s an increasing trend. As things become more automated, for example, self-driving cars, they’re using an adaptive system which has computational and statistical methodology built into it along with computer vision. Those systems need to be monitored and adaptive so that as conditions evolve—for example, if we change how we build roads—the system can’t be so rigid that it can’t adapt to those changes. There’s still a great deal of adaptability that still has to be developed.

**David Tewksbury**, interim associate dean for social and behavioral sciences



There’s a trend within (social and behavioral sciences) to be ever more specialized. But there’s a point where it stops, and that’s at undergraduate education. Increasingly, the narrow questions researchers study are connected. We need our students, our graduates, to know a lot about their topic of study, but also understand its connection to everything else going on in the world.

A society is better off the more its people are educated. I think a liberal arts education is what brings most of those benefits. That means that our future in LAS is bright. A good education in the future will hopefully give our students the courage to stop and look sideways instead of right in front. That’s where all the action is. ■

By Dave Evensen



Corin and Todd Chapman with their children, Ellie and Max. (Photo courtesy of the Chapmans and the Department of Mathematics.)

## Crunching the numbers for a cure

LAS ALUMNA FIGHTS A RARE DISEASE AFFLICTING HER SON

**C**orin Chapman is putting her degree to work in a way that hits closer to home than most careers: She’s trying to save the life of her son.

In 2014, Chapman’s son, Max, then 14 months old, was diagnosed with Peroxisomal Biogenesis Disorder, a rare disease with fewer than 100 known cases in the U.S. The disorder can lead to loss of vision and hearing, as well potentially life-threatening damage to the liver, kidney, and bones.

At first, Chapman (BS, ’04, actuarial science) and her family didn’t know where to turn for knowledge or support. Then another mother whose child has the disease in Peoria, Illinois, told them of about the Global Foundation for Peroxisomal Disorders (GFPD).

Chapman and her husband, Todd (BA, ’03, political science), traveled six hours from their Bloomington, Illinois, home to attend a family conference for GFPD in Omaha, Nebraska. There, they found the support their family was seeking.

“We finally felt like we had found other people that were in a similar situation, while it had felt so lonely before,” Chapman said. “So we instantly wanted to be a part of it.”

Chapman accepted the GFPD president’s offer to serve as treasurer. Although she had never been a treasurer, Chapman’s skills in numerical analysis and risk assessment (she is a life insurance actuary with State Farm) gave her necessary experience

to make tough research funding decisions for GFPD.

Chapman hopes her decisions can lead to positive outcomes for children affected with the disease. PBD research is advancing, but there is still much to learn.

In addition to her role with GFPD, Chapman, her husband, and her father-in-law, Alan Chapman (BA, ’69, teaching of social studies) organized a Tee It Up! for the GFPD charity golf event in 2016 that raised more than \$100,000 for disease research. She said only about 100 people were expected to attend, but more than 400 showed up.

“They weren’t there because it’s affecting some relative or friend of theirs. Really the only person that it’s affecting is our child, so to have that support for our child, and obviously all the other children that are affected by the disorder” is “overwhelming and uplifting,” said Chapman. “It’s those moments that keep you going.” ■

By Joey Figueroa

Chapman’s family plans another golf charity event for PBD research on May 18-19, 2017. For more information, please visit [www.teeitup4gfpd.com](http://www.teeitup4gfpd.com).

**Celebrating the Sesquicentennial:** Since its founding in 1867, the University of Illinois has enlightened all aspects of life and society through the work and education of its faculty, staff, and students. The university is marking the remarkable achievements of the past 150 years through numerous events and celebrations. See details at [150.illinois.edu](http://150.illinois.edu).

150  
ILLINOIS  
1867-2017



### CLAUDIA BROSEDER

How does a native of Germany become a leading scholar in Latin American history? For Claudia Broseder, a new assistant professor in the Department of History, it's a long story, with a happy new chapter in Champaign-Urbana.

After earning her doctoral degree at the University of Munich in 2002, Broseder's curiosity about Europe's intellectual heritage led her across oceans to study Andean culture. Eventually she was hired at Illinois.

"I chose to come to the U of I for its renowned Department of History, its library for Andean studies, and for its great past within the fields of Andean and Latin American studies," Broseder said. "Moreover, the colleagues of the History Department are just wonderful."



### NAVEEN NARISSETTY

Born in a small village in the southern Indian state of Andhra Pradesh, Naveen Narisetty was the first in his family to go to college.

In 2016, he earned his doctoral degree in statistics from the University of Michigan, where he won several prestigious awards as a student. Narisetty was also influenced by his advisors, including Xuming He, a former Illinois professor.

"I chose to be part of U of I in spite of many other offers because of the exceptionally strong academic and research environment across disciplines," Narisetty said.

# The many names of LAS

Some faculty in the College of LAS are pretty prominent—so prominent, in fact, that asteroids, craters, ridges, plants, bugs, chemical reactions, and companies bear their names. Here are just a few:



## NEW FACULTY BRINGING "TREMENDOUS" ENERGY TO LAS

School year begins with 24 new professors in a variety of departments

Last fall, 24 new professors joined the College of LAS. They come from all over the world in a variety of disciplines. Some are fresh out of school, while others are renowned in their fields. Here are profiles of just a few of them. Find a full list at [go.las.illinois.edu/newfaculty16](http://go.las.illinois.edu/newfaculty16). *By Dave Evensen*

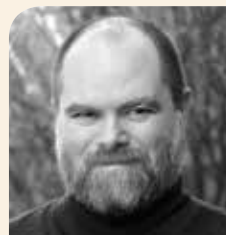


### LI-QING CHEN

Plant biology is in Li-Qing Chen's roots. Growing up on a small farm in China, she spent much of her time playing among vegetables and crops—and she became fascinated by them. Today, she specializes in plant sugar transport as a faculty member in the Department of Plant Biology.

Prior to coming to Illinois, Chen, who earned her PhD at China Agricultural University, spent five years as a research associate at Carnegie Institution for Science. Her work has been published in high-profile journals such as *Science* and *Nature*.

"I am looking forward to working with the excellent and friendly faculty and students at Illinois," she said.



### TED SANDERS

If you've heard of Ted Sanders, you probably like good stories. The rising author is the creator of *The Keepers*, a widely acclaimed children's book series likened to the work of J.K. Rowling and Rick Riordan.

But have you heard his comeback story? In 1992, he flunked out of the University of Illinois. Some 24 years of soul-searching later, however, in 2016, he moved into an office at Illinois as a promising new assistant professor of English.

"I'm in the same classrooms that I used to be as a student," he said. "Now I'm the professor." ■

- 1. Asteroid McVittie:** At least four asteroids are named after LAS professors or alumni, including asteroid 2417, named after **George McVittie**, who taught astronomy at Illinois from 1952 to 1972.
- 2. Carter Ridge:** Located in Antarctica, this 11 mile-long ridge located between Coral Sea Glacier and Elder Glacier is named after **Herbert E. Carter** (PhD, '34, organic chemistry), who served as a professor and administrator at Illinois from 1954 to 1971. The ridge was named in honor of his contributions to the National Science Board. (Photo courtesy of NASA.)
- 3. Futasujinus dietrichi:** One of three named species of leafhoppers recently discovered in China was named after **Chris Dietrich**, affiliate in entomology at U of I, "in recognition of his good work on leafhoppers." (Photo courtesy of Entomology Today.)
- 4. Girolami Method:** Several ideas, methods, catalysts, reagents, and other elements in the world of chemistry are named after faculty at U of I. One of them, the Girolami Method, is a predictive method for estimating densities of pure liquid components at room temperature. It is named after **Gregory Girolami**, professor of chemistry and William H. and Janet G. Lycan Professor.
- 5. Parr Instrument Company** was founded in 1899 in Champaign, Illinois as the Standard Calorimeter Company

by **S.W. Parr**, a chemistry professor who taught from 1891-1926 at the University of Illinois. (Logo courtesy of Parr Instrument Company, Moline, Illinois.)

- 6. Stebbins crater:** Located on the moon, the Stebbins crater, 131 km in diameter, is named for **Joel Stebbins**, a professor of astronomy at Illinois whose work at U of I became important to the development of the field of astronomy. (Photo courtesy of NASA.)
- 7. Vesper:** This refers to a genus of six beautiful plant species found in the western United States, including several types of springparsley. The name is from Latin, "vesper," sometimes referring to the evening star seen at sunset. Plant biology professor **Stephen Downie** and a doctoral student, Fengjie Sun, conducted molecular analyses on the plants, and the name vesper alludes to the combination of "Sun" and "Down," or sundown. (Photo courtesy of ©Al Schneider, swcoloradowildflowers.com.)
- 8. Xestoblatta berenbaumae:** In 2014, a doctoral student at Rutgers University who discovered a new type of cockroach named the bug after entomology professor **May Berenbaum**, for her support of his research. "There's no greater honor, and no better form of immortality in science," Berenbaum said. (Photo courtesy of Entomology Today.) ■

# AN EDUCATIONAL ODYSSEY

Free program offers pathway to a college degree



Stephanie Alumbaugh never forgot the day she presented a paper in junior high and was met with snickering and laughter. After that experience, Alumbaugh developed a fear of writing and presenting papers in public that stayed with her for years.

“That did not help my self-confidence, so I withdrew,” she said. “In school, I became just another student sitting there, filling a seat. I just existed.”

When Alumbaugh graduated from Normal (Illinois) Community High School in 1983, she considered going to Illinois Central College but did not have the money. Then she married and had children, and the dream of college evaporated.

Until last year.

After being away from school for over 30 years, Alumbaugh learned about the Odyssey Project, a one-year program offered for free in Champaign-Urbana. The course is taught by University of Illinois professors, including many LAS professors, for six hours of college-level humanities credit. She applied and was accepted, but then the fear hit her.

“I thought, ‘Oh no, now what do I do? I’m going to have to write papers.’”

But Alumbaugh says the program was so much better than she ever imagined. She graduated in 2016 as Odyssey’s class valedictorian, which meant she also had to give a speech, conquering yet another fear. Equipped with confidence from the class, she plans to continue her education at Parkland College in Champaign.

The Odyssey Project, which is a Bard College Clemente Course in the Humanities, started in Chicago in 2000. It came to Champaign-Urbana in the fall of 2006 through the support of the U of I’s Illinois Program for Research in the Humanities (IPRH), the U of I Office of the Provost, and Illinois Humanities,

a nonprofit humanities organization and the state affiliate of the National Endowment for the Humanities. There are 40 Clemente Courses worldwide, and in recognition of the course’s impact, President Obama awarded it the National Humanities Medal in 2014.

The project’s goal is to help students get past the most formidable barriers to education and establish a community of learning, said Angel Ysaguirre, executive director of Illinois Humanities.

The biggest obstacle is often money, he said. Many students cannot afford to go to college, but Odyssey is free, as are all of the books and materials. The program offers free childcare and transportation to and from class.

“They even provide dinner at the classes every Monday and Wednesday,” said Donna Clark, valedictorian for the 2014-15 school year. “How can you say no?”

To qualify, students have to be at least 18 and be comfortable reading a newspaper. Students should also be living at or below 150 percent of the federal poverty level, but this is flexible, says Samuel Byndom, director of Odyssey in Champaign-Urbana.

Odyssey covers five courses over the span of two semesters—American history, literature, philosophy, critical thinking and writing, and art history. Meeting twice a week, the classes typically have about 20 to 25 students.

The program gives students a sense of pride and worth, Ysaguirre said. For instance, he recalled one student who told him that “people looked at her differently on the train when she’s holding a book by Plato.”

Classes are diverse in both ethnicity and age, with students ranging from 18 to 75 years old. Byndom teaches the history class in Urbana, and he remembers an older

man describe how as a child he witnessed authorities with shotguns deterring African-Americans from voting.

“The younger students in the class were astounded,” Byndom said. “How could those things have existed?”

Odyssey classes are also eye-opening for the teachers, said Ysaguirre. He recalled a class where students were discussing the Greek play, *Antigone*—the story of a woman who decides to bury her brother in violation of the king’s decree.

“The conversation was about whether your ultimate allegiance is to your family or to the state,” Ysaguirre said. “There was an older, African-American woman in the class, who said she was dealing with the same question in her life.”

The woman’s daughter was a drug dealer, and she wouldn’t listen to her mother’s pleas for her to stop. Now the mother struggled with the same question that haunted *Antigone*: Should she turn in her daughter? Or should her allegiance be to her family?

“The Odyssey class transformed the way I look at *Antigone*,” Ysaguirre said. “This woman brought it to life in a way that it never had before.”

Donna Clark says she was afraid of failure before taking the Odyssey course. “But from the very first day, I knew this was what

I wanted to do,” she said. “I went from zero to 100 very quickly, and it all started with Odyssey.”

After completing two semesters in 2015, Clark began taking classes in business administrative technology at Parkland College. She said it can be challenging juggling

homework with a job, but her husband gives her a lot of space to hit the books on the weekends.

“He watches football, and I do homework,” Clark said.

In addition to the class in Champaign-Urbana, the Odyssey program is offered in three different locations in Chicago, and one class is given in Spanish. The Chicago program also offers a second year, which is more thematic and interdisciplinary than the first year, said Chris Guzaitis, director of the Odyssey Project in Chicago. She said the second year is intended to help provide a smooth transition to college life.

The Urbana campus hopes to add a second year as well because a higher demand is there, said Antoinette Burton, director of IPRH and an LAS professor of history. Currently, some teaching in the program is conducted by Dale Bauer, professor of English and gender and women’s studies.

“The students in Odyssey leave with a profound sense of transformation,” Burton said.

For many, like Clark and Alumbaugh, Odyssey has become the pathway to a two-year or four-year degree. Both women have set their sights on becoming the first in their families to receive a college degree.

Alumbaugh said she learned from reading Socrates in the Odyssey philosophy class that both education and experience make you who you are.

“Odyssey helped me become excited about school,” she said. “The classes are small, and they are taught by University of Illinois professors. You can’t beat that.”

Clark said education is now at the forefront of her life.

“Now,” she said, “I need to keep learning.” ■

By Doug Peterson

# The heart of discovery

## LAS leads the campus in basic medical research

Where does a medical breakthrough begin? At the University of Illinois, where many mysteries of human health are solved, more often than not the answer is this: In the laboratories of the College of LAS.

“LAS is where the basic medical research impacting human health is being done” on campus, said **Stephen Sligar**, director of the School of Molecular and Cellular Biology (MCB), Swanlund Chair, and professor of biochemistry, chemistry, and biophysics and computational biology.

Aside from raw numbers (see boxes on right), the truth of Sligar’s statement is evident in the myriad stories of health research coming out of the college. Here are just a few prominent examples:

### Genome mining for a cure

One of the best ways to locate a needle in a haystack is to make your haystack smaller—and that’s exactly what **Wilfred van der Donk** and **William Metcalf** have done with a dramatic new alternative approach to discovering new pharmaceutical drugs.

The system is called “genome mining,” said van der Donk, the Richard E. Heckert Endowed Chair in Chemistry. Instead of screening thousands of strains of bacteria to find a few capable of creating new drug compounds, researchers look for the genes behind this ability. By hunting for the genes, scientists can narrow their search dramatically.

In 2015, van der Donk and Metcalf, the G. Williams Arends Professor in Molecular and Cellular Biology and professor of microbiology, were able to narrow down 8,000 strains of bacteria to a smaller pool of 350, which were capable of producing phosphonates.

Van der Donk—who is also a Howard Hughes Medical Institute investigator, an award given to those doing top medical science research—said that a “remarkably high percentage of phosphonates” have made it to commercial use, either as antibiotics in medicine or as innovative pesticides in agriculture. But in recent years, the cost of discovery has been a major obstacle to finding new antibiotics

from natural molecules such as phosphonates. Genome mining could break through this barrier because it is faster than traditional approaches.

“About 95 percent of the bacteria that scientists spend their time screening are not making what they want,” van der Donk explains. “With genome mining, we can focus on the 5 percent.”

### High risks and high rewards

To underscore the role of basic medical science funding in the college, three of its professors recently received a National Institutes of Health (NIH) transformative research award—one of only 12 given out across the country in the past year. This award, which is given to high-risk, high-reward research, has gone to a collaborative effort among **Chad Rienstra** in chemistry and **Jim Morrissey** and **Emad Tajkhorshid** in MCB.

The three professors are working on a creative new approach to studying cell membrane lipids known as phospholipids. Phospholipids interact with membrane proteins, which make up more than half of the targets for currently approved pharmaceuticals. But scientists have found it extremely difficult to study the interaction between membrane proteins and phospholipids, limiting drug breakthroughs.

Morrissey, Rienstra, and Tajkhorshid believe they have come up with a solution to this problem. Morrissey’s lab uses economical and innovative ways to synthesize a particular phospholipid known as PS. Then Rienstra’s lab analyzes the lipid’s 3-D structure using new approaches to nuclear magnetic resonance spectroscopy. Finally, Tajkhorshid’s lab runs computer simulations of the interaction between lipids and membrane proteins.

NIH has given them the five-year task of coming up with a toolbox of methods that scientists around the world can use to study such interactions.

Understanding how membrane proteins interact with phospholipids will open all sorts of new drug possibilities, Morrissey said. For instance, it will help in the hunt for new anticoagulants—

“blood thinners,” as they are popularly known.

When a blood vessel is cut and bleeding begins, cells are damaged. As a result, the lipids, which are normally inside the cell, move to the outside. Blood-clotting proteins circulating in the blood then detect these lipids and bind to them, setting off a chain reaction that causes the blood to coagulate.

By understanding how this process works, pharmaceutical companies may be able to develop more effective and less risky anticoagulants for patients who take them to prevent dangerous blood clots. Blood thinners slow down clotting, but they have the potential side effect of excessive bleeding. Researchers are on the hunt for anticoagulants with fewer bleeding risks.

“This is the most exciting science I have done in a long, long time,” Morrissey says.

### The single investigator model—and major discoveries

Sligar was recently given a Maximizing Investigators’ Research Award (MIRA) from NIH, and van der Donk was given an NIH Merit award. Both awards allow researchers the freedom to explore new science with fewer strings attached.

Sligar has one of the longest connections with NIH on campus, because he has received continuous NIH funding going back to his professorial days at Yale University in 1977. He brought his NIH funding with him when he came to Illinois in 1982.

Sligar is well known for developing the Nanodisc—a system for studying cell membrane proteins and lipids that is now used in hundreds of laboratories around the world. The Nanodisc recreates a cell membrane in which to study biological processes, such as blood coagulation, cell migration, and cancer signaling. (Morrissey, Rienstra, and Tajkhorshid all use the Nanodisc in their collaborative project.)

“Today, my laboratory is very excited about using Nanodiscs to study a signaling complex formed by RAS,” Sligar said, referring to genes that play a pivotal role in cell signaling. “The RAS molecule is at the heart of many cancers.” In fact, he says, 97 percent of pancreatic cancers correlate with a mutation in the RAS gene.

A mutation in the RAS gene can turn off the cell death mechanism, which protects the body by preventing cells from multiplying out of control.

“If we can find a way of preventing the cell proliferation due to RAS and the associated signaling pathways, then we would have a cure for

many cancers,” he said. “Interestingly, again it is the phospholipids that are critical, including those with phosphate groups on attached sugars such as PIP2 and PIP3.”

The phospholipid emphasis provides another connection between Sligar and the Morrissey-Rienstra-Tajkhorshid collaboration.

Van der Donk, who serves on the council of the largest NIH institute for basic science, said this institute recently decided to focus more on individual investigator research, rather than large team efforts among multiple labs. Sligar said this is because the major discoveries that have improved human health throughout history, such as the discovery of antibiotics, were often made by a single-investigator-led team.

“Discovery is the fundamental thing, and that’s something we’ve done exceptionally well at Illinois since World War II. It’s what we’re famous for,” he said. “We all have a lot of crazy ideas and many of them don’t work, but a few turn out to be major discoveries.” ■

By Doug Peterson

### National Institutes of Health research grants

- Campus received more than \$61 million in NIH research grants in 2016.
- LAS researchers (mostly in the School of Chemical Sciences and School of Molecular and Cellular Biology) received 49 percent of these grants.
- Interdisciplinary institutes (with LAS researchers making up the majority of these teams) received 27 percent of these grants.

### Bound for the health industry

- Of the more than 1,700 students majoring in molecular and cellular biology, 79 percent declare themselves as pre-health (pre-medicine, pre-dentistry, pre-pharmaceutical, or pre-veterinary medicine).
- In 2013, roughly 59 percent of students accepted into medical school from the U of I campus majored in molecular and cellular biology or biochemistry. Another 23 percent came from other LAS majors.



Stephen Sligar



Wilfred van der Donk



William Metcalf



Chad Rienstra



Jim Morrissey



Emad Tajkhorshid

# WASSAJA: A bridge between worlds

Wassaja, adopted and renamed Carlos Montezuma.



## The legacy of U of I's first Native American graduate is stronger than ever

Life was hard in southern Arizona in the 19th century, and there wasn't much reason to expect that a young boy named Wassaja would long be part of it when he was dragged into the mountains by enemy raiders in 1871. Certainly there was no reason to expect that 145 years later a building at the University of Illinois would be named in his honor.

Last fall, however, Illinois dedicated Wassaja (WAHS-ah-jah) Hall, a residence building that houses some 500 students, after the university's first Native American graduate. The ceremony included members of the Fort McDowell (Arizona) Yavapai Nation Tribal Council—including several of Wassaja's descendants.

"Besides the value of education, Wassaja taught us that despite our own small size, we can move mountains," said Bernadine Burnette, president of the tribal council.

As Wassaja waged a successful fight for Native American rights, he had a deep understanding of America's widely separate cultures during the late 19th and early 20th centuries. Much of that understanding was forged during his time as a student at the University of Illinois in the early 1880s.

How did Wassaja come to study at Illinois? The story begins after Wassaja—whose name means "beckoning" in his native Yavapai language—was kidnapped by Pima raiders, when he was offered for 30 silver dollars to Carlo Gentile, an Italian photographer. Gentile felt a connection with the boy and adopted him as his own son, renaming him Carlos Montezuma.

The pair spent the next few years moving around the country, with Wassaja even playing a theatrical role with Buffalo Bill in the early 1870s. Wassaja was a promising student, however, and Gentile, realizing that his adopted son needed a stable home to complete his education, placed the boy in the care of Baptist minister William H. Steadman, of Urbana, according to "The Remarkable Carlo Gentile: Italian Photographer of the American Frontier." (Years later, Steadman would officiate over the wedding of Wassaja and Marie Keller, a Romanian-American.)

Wassaja graduated with honors from Urbana High School and enrolled at Illinois in 1880, when he was only 14 years old. According to accounts, he excelled in a variety of courses at Illinois, and he honed his debate and oratorial skills as a member of the

Adelphic Society. He also proved popular among his classmates, who endearingly called him "Monte," according to a story in the Public i, and he was elected president of his senior class.

The university was so impressed by him that it waived Wassaja's matriculation fees, and Wassaja earned a bachelor's degree in chemistry in 1884. He went on to the Chicago Medical College, becoming the first Native American male to earn a medical degree.

"I think (Wassaja) was accepted in this community," Jamie Singson, director of U of I's Native American House, told the News-Gazette. "He really is a son of Urbana. He not only belongs to the University of Illinois but he belongs to the Champaign-Urbana community."

Wassaja never forgot Illinois, as he corresponded with his alma mater regularly for years after he left Champaign-Urbana. He also drew upon his education extensively. Wassaja became a physician for the Bureau of Indian Affairs, but increasingly he became dismayed with the agency after witnessing poor management of reservation facilities. He would eventually leave the bureau to begin a private practice in Chicago, but he was compelled to fight for the land and water rights of his native Yavapai tribe.

The issue would consume the rest of his life, as by the early 1900s Wassaja was nationally recognized as a passionate Native American leader. In 1911, he led a successful fight to defeat a bureau plan to relocate his native Yavapai tribe from Fort McDowell, according to the Encyclopedia of World Biography. A few years later, the bureau once again tried (and failed) to relocate the Yavapai, as Wassaja's resistance to the idea was so strong that he once nearly came to blows with bureau officials.

According to a 1916 issue of American Indian Magazine, he delivered a rousing speech in 1915 at the Society of American Indians Conference in Kansas, where he declared, "We must act as one. Our hearts must throb with love—our souls must reach to God to guide us—and our bodies and souls must be used to gain our people's freedom. In behalf of our people, with the spirit of Moses, I ask this: The United States of America—let my people go."

In 1916, Wassaja began publishing Wassaja: Freedom's Signal for the Indians, a newsletter devoted to addressing the future of Native Americans. He continued this until the end of his life, 1923, when he died of tuberculosis at Fort McDowell.

Wassaja died in a simple hut, but his legacy has inspired others for years. In the tiny community of Fort McDowell, residents have named their health clinic after Wassaja, and the community has helped create several academic scholarships in his name.

"If not for Wassaja's efforts," said Burnette, "it's safe to say there wouldn't be a Fort McDowell."

During the dedication of Wassaja Hall, Barbara Wilson, executive vice president and vice president for academic affairs for the U of I System, said it's hard to think of anyone who exemplified the Illinois story as well as Wassaja.

"His Illinois experience didn't just give him a degree or education," she said. "It made him a leader, and that's what we hope for all our students." ■

By Dave Evensen



Carlos Montezuma poses with his wife, Marie Keller.

(All photos courtesy of University of Illinois Archives.)



Wassaja, age four, before he was captured.

GET TO KNOW THE

# College of Liberal Arts & Sciences'

NEW STUDENTS

We welcomed a record number of freshmen to campus last fall:

**2,314**

(That's 114 more than last year)

**19.6 percent** of our freshmen are members of under-represented populations

**23 PERCENT** are the first in their families to attend college. **14.5 percent** are international students

**641**

**transfer students** joined us in LAS last fall, too. **22.8 percent** are international students

**32 percent** are the first in their families to attend college. They come in with a **3.45 average college GPA**

## 2017 LAS Alumni Association Events

**Join us** for this year's LAS alumni events! Take advantage of these excellent opportunities to reunite with friends and classmates, have fun, and learn something new. You'll also find out more about initiatives and programs that make LAS one of the best colleges in higher education.

For additional information about College of LAS events and registration, please visit [las.illinois.edu/alumni/events](http://las.illinois.edu/alumni/events), email us at [las-alum@illinois.edu](mailto:las-alum@illinois.edu), or call (217) 333-7108.

**Sunda: Fusion of Food and Fun**

Billy Dec's culinary creation of a lively mix of Asian flavors.  
Program by the Department of Asian American Studies  
noon to 3 p.m. • **Saturday, April 29, 2017**  
Sunda, Chicago

**America's Fascination with the Automobile**

View over 300 fun, fancy, and crazy cars and roadsters!  
noon to 4 p.m. • **Saturday, June 3, 2017**  
Klairmont Kollections, Chicago

**Windy City Showdown Returns!**

**Cubs vs. White Sox**  
Game ticket with guaranteed seat and all you can eat buffet!  
5:45 p.m. pregame event  
7:10 p.m. first pitch  
**Wednesday, July 26, 2017**  
Chicago White Sox Guaranteed Rate Field

**Solar Eclipse - A Trip to the Epicenter**

Program by the Department of Astronomy  
**Monday, August 21, 2017**  
Goreville, Illinois  
Bus transportation from Champaign-Urbana available

**Math Meets Music**

Program by the Department of Mathematics  
4-7 p.m. • **September 2017**  
South Lounge, Illini Union

**Student Career Workshop**

Student networking event with alumni!  
10 a.m.-3 p.m. • **Saturday, October 7, 2017**  
Illini Rooms, Illini Union

**2017 Homecoming**  
**Saturday, Oct. 28, 2017**

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the College of LAS

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College of  
**Liberal Arts & Sciences**  
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— **Malik Moulton**, Chicago, Illinois. Studying geography and geographic information science and hopes to earn a master’s degree in GIS.



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