

NORTHWESTERN UNIVERSITY RESEARCH NEWSLETTER

September 2014

Volume 7, Number 1

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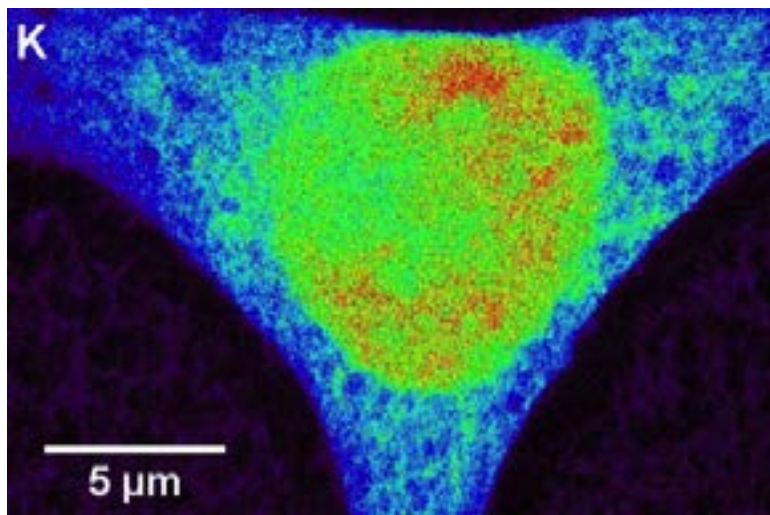
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LS-CAT at Argonne Helps Enlighten Life Sciences



Fluorescence mapping of potassium is seen in a cell after it was frozen and placed in the bionanoprobe.

In early 2012, tracking a nanoparticle's location within a cell was impossible, yet imperative.

If researchers could confirm that the ultra-fine particles developed by **Gayle Woloschak**, radiation oncology, were making their way into the nucleus of a cell, drugs might then be attached to them in an attempt to destroy cancer from within.

“The effort involved in designing and obtaining a first-of-its-kind microscope — the bionanoprobe — is a perfect example of how the partnership between Northwestern and Argonne can work,” says **Keith Brister**, manager of the Life Sciences Collaborative Access Team (LS-CAT) at Argonne National Laboratory. “The bionanoprobe has the capability of providing three-dimensional maps of exactly where specific elements are located.”

The microscope allowed Woloschak to substantiate the concentration of nanoparticles that reached the nucleus. It also gave researchers like **Tom O'Halloran**, chemistry, a chance to investigate — at the nanoscale — the changes that occur to an egg when penetrated by sperm.

Housed at LS-CAT, the bionanoprobe is one of seven stations at two sectors managed by Northwestern University at Argonne's Advanced Photo Source (APS). Three stations are part of the du Pont-Northwestern-Dow Collaborative Access Team (DND-CAT) and are used in materials science research. The other four are at LS-CAT.

continued...



Northwestern Research

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Beyond the bionanoprobe, LS-CAT allows researchers to study the structure of proteins using intense beams of x-rays focused by mirrors and lenses onto tiny crystals of biological samples. Giant, multimillion-dollar detectors collect the transmitted or scattered x-rays needed to calculate the location of atoms in each protein.



Keith Brister

Every protein structure that is determined by non-proprietary work at LS-CAT is then deposited into the Protein Data Bank and made publicly available.

“LS-CAT has been incredibly important to the life sciences community and it has ensured Northwestern’s involvement in answering cutting-edge structural-biology questions,” says **Alfonso Mondragón**, molecular biosciences, and the scientific director of LS-CAT. “Northwestern was one of the first institutions involved in the APS, which provides a very important educational resource that is only available due to our relationship with Argonne as well as our proximity to the lab.”

Although the APS is oversubscribed, the collaborating partners of LS-CAT are able to schedule 75 percent of the available time with the beamline, which runs 24 hours a day for a three-month-on, one-month-off cycle. The Department of Energy requires the remaining 25 percent of time be granted to applicants from anywhere in the world.

“What I find absolutely fascinating about the APS are the scientific opportunities that exist here,” says Brister. “Pretty much, any kind of x-ray science can be advanced. A researcher can arrive with some fantasy about doing something new and chances are that we’ll figure out how to do it.”

The user community for LS-CAT typically consists of about 400 researchers from around the nation per year, each typically running one of three basic crystallography experiments over a few days. Brister described the most common tests as those looking to understand a protein to learn more about its role in a biological process, its interactions with a drug, or as part of a genomics project.

“LS-CAT is essential for our x-ray microscopy work and has provided us with a novel tool to explore cell structure and function,” says Woloschak. “Recently, we’ve been tracking drug delivery using the bionanoprobe and other users have been working to examine new 3D images of cells.”

Partners in Discovery

An important part of the Northwestern strategic plan is to “Discover creative solutions.” It says “We will work together through research and innovation to create solutions to problems that will improve lives, communities, and the world.” Our partnerships with Chicago’s world-class institutions have built alliances that will change the future. Throughout the coming year, the Research Newsletter will highlight the unique range of opportunities that Northwestern faculty, students, and staff have to both collaborate and learn from these affiliations.

What is the Advanced Photon Source at Argonne?

The ring-shaped Advanced Photon Source (APS) at Argonne National Laboratory is 1,153 feet in diameter. The facility contains a steel and concrete cyclic particle accelerator in which electrons move at close to the speed of light

The long pathway results in the APS having the brightest beam of any storage ring in the Western Hemisphere, creating an x-ray so powerful that researchers can see the subatomic structures of biological and inorganic materials.

As the electron beam, guided by magnets, circulates in the storage ring, x-ray beamlines break off in tangents of two different types: bending magnets and insertion devices. These tangential beamlines then enter the laboratory spaces to provide x-rays for experiments.

Current LS-CAT Members

Current LS-CAT members are Northwestern University, Michigan State University, University of Michigan, Van Andel Research Institute, University of Wisconsin-Madison, Vanderbilt University, and University of Illinois.

Welcome New Faculty Members

The following is a list of new Northwestern faculty members for the 2014-2015 year. Names were submitted by the dean's office of each school. All included faculty members are academic full-time, tenure-track, and primarily funded by Northwestern, rather than Northwestern affiliates. Because the Feinberg School of Medicine hires year-round, Feinberg faculty included in the list are from October 1, 2013 to September 30, 2014. Please join us in welcoming the following:

Bienen School of Music

Steven Demorest
David McGill

Feinberg School of Medicine

Adam Murphy
Anne Henkel
Malek El Muayed
Joshua Meeks
Ryne Estabrook
Congong He
Tamara Isakova
Danielle Maatouk
Joseph Mazzulli
Jonathan Silverberg
Bettina Yanez
Shiv Darius Tandon
Sidartha Jonnalagadda
Greg Schwartz
Ankit Bharat
Michelle Burns
Sarki Abdulkadir
Stephen Hanauer
Ramana Davuluri
Al George
Charles James
Daniel Corcos
Siobhan Phillips
Thorsten Kahnt
Jennifer Kearney
Dong-Hyun Kim
Judith Moskowitz
Derek Wainwright
Derek Walsh
Mojgan Naghavi
Emily Miller
Rintaro Hashizume
Kathryn Radigan
Matthew O'Brien
Ali Shilatifard

Ronen Sumagin
Courtney Voelkner
Elizabeth McNally
Amisha Wallia
Curtis Weiss

Kellogg School of Management

Scott Baker
Nicolas Crouzet
Ian Dew-Becker
Charles Nathanson
Brett Gordon
Maryam Kouchaki
Nour Kteily
Jon Maner
Daniel Barron

Law School

Michael Frakes
Destiny Peery
Deborah Tuerkheimer

McCormick School of Engineering and Applied Science

Anindya De
Jing Dong
Jennie Duggan
Jie Gu
Sossina Haile
Gloria Kim
Madhav Mani
David Morton
James Rondinelli
G. Jeffrey Snyder
Amanda Stathopoulos
Aravindan Vijayaraghavan
Gregory Wagner
Ermin Wei

School of Communication

Michael Attie
Gina DiSalvo
Ariel Rogers
Shayna Silverstein

School of Education and Social Policy

Jolie Matthews
Terri Sabol
Shirin Vossoughi

Weinberg College of Arts and Sciences

Antonio Auffinger
Klinton Bicknell
Luigi Bocola
Lina Britto
Corey Byrnes
Laura DeMarco
Claude-Andre Faucher-Giguere
Paul Gillingham
Yingni Guo
Sean Hanretta
Yuan He
Jun Hu
Yevgenia Kozorovitskiy
Xu Liu
Shaundra Myers
Patrick Noonan
Matthew Notowidigdo
Magdalena Osburn
Mihnea Popa
Tiffany Schmidt
David Schwab
Chloe Thurston
Erica Weitzman
Alexis Wellwood

Kibbe Named Editor in Chief of JAMA Surgery



Melina R. Kibbe

Melina R. Kibbe, MD, surgery: vascular, has been named editor in chief of the scientific journal *JAMA Surgery*, effective January 1.

“This is an incredible honor for me,” says Kibbe. “I plan to continue publishing highly relevant and impactful work that will contribute to and advance the care of patients with surgical disease. I hope to provide a vehicle through which surgeons can remain up-to-date on

current standards of care. However, I also hope to provide surgeons with novel data and innovative concepts and approaches that challenge current paradigms, forcing us to think more broadly about how we treat patients with surgical disease and to develop better and safer ways to care for our patients.”

Kibbe recently published a study in the journal *Surgery* about the problem of overlooking sex differences in biomedical research.

The study found that surgical researchers rarely use female animals or cells in their published studies — despite a huge body of evidence showing that sex differences can play a crucial role in medical research.

[Click here to read more.](#)

Downey Receives Prestigious NSF Award

Doug Downey, electrical engineering and computer science, has received a prestigious Faculty Early Career Development Award from the National Science Foundation (NSF).

The award, part of the NSF’s CAREER program, recognizes and supports early career development of teacher-scholars who are most likely to become the academic leaders of the 21st century. The minimum award size is \$400,000 over five years.

“This award is an honor and great enabler for my group’s research,” Downey says. “The support will make it possible for us to deliver impactful research, train multiple PhD students, and provide new educational opportunities.”

Downey’s research interests fall into the areas of natural language processing, machine learning, and artificial intelligence. He is interested in methods that learn automatically from large data sets and, in particular, new ways to extract knowledge from the web to power new web search capabilities.

[Click here to read more.](#)



Doug Downey

Silverman to be Given iCON Innovator Award

Richard B. Silverman, chemistry, is being honored by the iBIO Institute with its iCON Innovator Award at a gala on September 29 in Chicago.

“For a basic scientist, the impact of a discovery is generally short lived, but by receiving this honor I am reminded that there have been millions of people who have benefited from my work,” Silverman says.

The annual iCON Award recognizes a scientist who demonstrates leadership in the life sciences and who conducts research that is anticipated to enhance economic development throughout Illinois.

Silverman was nominated by a colleague at Northwestern and selected by the iBIO board of directors to receive the award based on his career as a researcher and professor.

Silverman has published more than 325 research articles, holds 57 domestic and foreign patents, and has written five books. He is the inventor of Lyrica, a drug marketed by Pfizer since

2005 for epilepsy, neuropathic pain, and fibromyalgia and has completed Phase I clinical trials of another drug for infantile spasms.

He is the third member of the Northwestern faculty to be honored with the iCON Award. **Chad Mirkin**, chemistry, won the inaugural prize in 2007, and **Thomas Meade**, neurobiology, won it in 2009.



Richard B. Silverman

September Named National Biosafety Stewardship Month

The White House and National Institutes of Health (NIH) have announced September as National Biosafety Stewardship Month.

The initiative is meant to strengthen biosafety oversight and practice throughout the country and involves a systematic review of all federal laboratories. Academic institutions, like Northwestern, that receive federal funds, are strongly encouraged to participate as well.

“Northwestern will use this opportunity to work with our faculty to identify further gains in freeing up laboratory space by clearing unwanted items from our freezers and refrigerators — beginning in the medical school,” says **Michael Blayney**, executive director of the Office for Research Safety. “This is a good opportunity to identify and remove unused materials and continue our efforts to improve housekeeping and laboratory hygiene.”

The initiative is part of the University’s ongoing strategy to achieve higher laboratory standards by disposing of historical collections of hazardous materials and recycling obsolete equipment in order to recover and renew usable lab space.

“The Office for Research Safety (ORS) is working diligently to improve its services to better serve the Northwestern research community,” Blayney says.

During National Biosafety Stewardship Month, ORS will be working with department chairs and administrators to provide additional help, collection containers, and dedicated days to clean out freezers and refrigerators. A formal University announcement regarding this initiative is planned for mid-September.

The lab review process is expected to take 90 to 120 days to complete.

Discover Anniversary Highlights Year of Research Breakthroughs

When the Discover website launched last September, it quickly became a gathering place for research news at Northwestern.

Focused on biomedical sciences, design, energy, sustainability, global health, international studies, markets, social structures, public policy, media, nanoscience, performing arts, oral expression and more, the website has featured the research of more than 170 faculty members.

To curate Discover, the Office for Research works with schools and departments across the Evanston, Chicago, and Qatar campuses to pull together a diverse range of articles.

The site is updated continually and has showcased exciting discoveries that range from a new biomarker in an aggressive form of **breast cancer** to the transformative properties of **music**.

If you would like **Discover** to feature your research, contact **Roger Anderson**, publications editor in the Office for Research.

Mirkin Honored in Washington

Chad Mirkin, chemistry, was recently honored by the Friends of the National Library of Medicine at its annual gala in Washington, D.C.

“Being given the Distinguished Medical Science Award validates our efforts to move Northwestern and the International Institute for Nanotechnology (IIN) to the forefront of nanomedicine,” says Mirkin, founding director of the IIN.

Mirkin is credited with inventing nanoscale spheres of DNA that can naturally enter cells and be used to flip genetic switches associated with many diseases, including several forms of cancer. His collaborative work with **Alexander H. Stegh**, neurology, was recently featured on the cover of *Science Translational Medicine*, and showed the promise of using the nanoparticles to treat glioblastoma multiforme, the most common and aggressive form of brain tumor.



Chad Mirkin

New Center Will Advance ALS Research

The Les Turner ALS Foundation has made a \$10 million commitment to create the Les Turner ALS Research and Patient Center at Northwestern Medicine to accelerate research and advance patient care in amyotrophic lateral sclerosis (ALS), also known as Lou Gehrig's Disease. ALS is a fatal neurodegenerative disease that often strikes people in the prime of their lives.

The Center will bring together the Les Turner ALS Research Laboratories, the Les Turner/Lois Insolia ALS Center, the ALS tissue bank and other ALS research, clinical and education activities at Northwestern under one umbrella.

The Foundation, a partner with Northwestern for 35 years, has provided support that has led to significant advances from the laboratories of **Teepu Siddique** and **P. Hande Ozdinler**, both neurology.

Siddique's lab has made several discoveries in the field of ALS over the years, including the identification of genetic causes of the disease.



Teepu Siddique



P. Hande Ozdinler



Ice Bucket Challenge

Since its inception, the ALS Ice Bucket Challenge has helped raise more than \$110 million. The local Les Turner ALS Foundation reported raising \$550,000 more this August, compared with a similar three-week span last year. [Watch P. Hande Ozdinler take the challenge.](#)

Ozdinler's lab for the first time isolated the motor neurons in the brain that die in ALS and gave them fluorescent tags so that they can be tracked and studied.

A third ALS research laboratory is being launched at Northwestern in January under the leadership of **Evangelos Kiskinis**.

[Click here to read more.](#)

Northwestern Part of Group to Explore Cloud Computing

The International Center for Advanced Internet Research at Northwestern University (iCAIR) is part of a national research consortium that has received \$10 million from the National Science Foundation to investigate cloud computing and help develop the next generation of clouds.

Cloud services have become ubiquitous to major 21st-century economic activities, changing the way we work, communicate and learn. However, cloud services and technologies could be

significantly more powerful than they are now. A persistent barrier to further advancement has been the lack of a large-scale experimental cloud research platform.

The new consortium will enable computer scientists from across the country to develop and experiment with novel cloud architectures and pursue new, architecturally enabled applications of cloud computing.

[Click here to read more.](#)

Northwestern Part of New 'Broader Impacts' Network

Northwestern University is part of a new multi-institutional initiative to encourage education and outreach efforts that extend the impact of federal scientific research. The National Science Foundation has awarded a \$500,000 grant to a five-year initiative called the Broader Impacts and Outreach Network for Institutional Collaboration (BIONIC).

The BIONIC initiative will create a national network of professionals who will share ideas and resources to help scientists at research institutions design, implement, and evaluate their "broader impact" activities. Through broader impacts efforts, as required by many federal grants, scientists educate the public and show the social relevance of their research.

Through the Office of STEM Education Partnerships (OSEP), Northwestern provides its faculty with support to create effective broader impacts plans for federal grants.

"This new five-year award validates the important broader impacts work that OSEP has been doing on campus and also recognizes our leadership nationally," says **Kemi Jona**, director of OSEP. "I look forward to working with my colleagues across the country to expand this broader impacts network and increase its impact."

[Click here to read more.](#)

Electric Current to Brain Boosts Memory

Stimulating a particular region in the brain via non-invasive delivery of electrical current using magnetic pulses improves memory, reports a new Northwestern Medicine study.

The discovery opens a new field of possibilities for treating memory impairments caused by conditions such as stroke, early-stage Alzheimer's disease, traumatic brain injury, cardiac arrest, and the memory problems that occur in healthy aging.

"We show for the first time that you can specifically change memory functions of the brain in adults without surgery or drugs, which have not proven effective," says senior author **Joel Voss**, medical social sciences. "This noninvasive stimulation improves the ability to learn new things. It has tremendous potential for treating memory disorders."

The study was published August 29 in *Science*.

[Click here to read more.](#)

Study of Brain Explains Why Childhood Lasts So Long



A five-year old's brain is an energy monster. It uses twice as much glucose (the energy that fuels the brain) as that of a full-grown adult, a new study led by Northwestern University anthropologists has found.

The study helps to solve the long-standing mystery of why children grow so slowly compared with our closest animal relatives.

It shows that energy funneled to the brain dominates the human body's metabolism early in life and is likely the reason why humans grow at a pace more typical of a reptile than a mammal during childhood.

"Our findings suggest that our bodies can't afford to grow faster during the toddler and childhood years because a huge quantity of resources is required to fuel the developing human brain," says **Christopher Kuzawa**, anthropology, a fellow at the Institute for Policy Research and first author of the study. "As humans we have so much to learn, and that learning requires a complex and energy-hungry brain."

[Click here to read more.](#)

Responsible Conduct of Research Requirements

Principal investigators using a National Science Foundation (NSF) award to pay undergraduate students must ensure student completion of Responsible Conduct of Research (RCR) training within 60 days.

Training in RCR is critical to preparing students on how to address ethical challenges that may arise when conducting scholarly study and research. The NSF requires RCR education for all trainees supported by NSF awards.

Additional ethics and safety training is required if research involves human subjects, animal subjects, or particular types of hazardous substances.

[Click here to learn more.](#)

Depression Often Untreated in Parkinson's Disease

Depression is known to be a common symptom of Parkinson's disease, but remains untreated for many patients, according to a new study by Northwestern Medicine investigators in collaboration with the National Parkinson's Foundation.

In fact, depression is the most prevalent non-motor symptom of Parkinson's, a chronic neurodegenerative disorder typically associated with movement dysfunction.

"We confirmed suspicion that depression is a very common symptom in Parkinson's disease. Nearly a quarter of the people in the study reported symptoms consistent with depression," says **Danny Bega**, neurology, and first author of the study. "This is important because previous research has determined that depression is a major determinant of overall quality of life."

Researchers focused their analysis on a group of patients with depressive symptoms who were not receiving treatment. Throughout a year of observation, less than 10 percent of them received prescriptions for antidepressants or referrals to counseling.

[Click here to read more.](#)

IIN Symposium Oct. 9

The International Institute for Nanotechnology (IIN) is hosting its annual symposium on October 9 at the Hilton Orrington Hotel in Evanston.

A global hub of excellence in the field of nanotechnology, the IIN represents more than \$600 million in nanotechnology research, educational programs, and supporting infrastructure.

Each year the IIN organizes and sponsors a symposium that brings together leading national and international researchers.

This year's event will feature presentations by **Joanna Aizenberg** of Harvard University, **David Awschalom** of the University of Chicago, **David Ginger** of the University of Washington, **Jennifer Lewis** of Harvard University, **Nicholas A. Peppas** of the University of Texas at Austin, and **Molly Steven** of the Imperial College of London.

[Click here to register.](#)

ISEN Futures Summit Oct. 16

The ISEN Futures Summit, "Resilient Futures: Ecosystem and Infrastructure Risk," will be held from 3:15-7:15 p.m. on October 16 at the Hilton Orrington Hotel in Evanston.

The event will feature two expert panels. [Click here for more information.](#)

Significant Financial Interests Must Be Disclosed

Faculty and staff members involved in the design, conduct, or reporting of research should be aware that the annual disclosure process is not sufficient to meet research conflict of interest (COI) requirements if new significant financial interests (SFIs) are obtained. New SFIs must be disclosed within 30 days of the activity or payment.

"If SFIs are disclosed late that are deemed to present COI concerns, the government requires a retrospective review of research activity to determine whether or not the research was biased due to the unmanaged COI," says **Julia Campbell**, director of the Conflict of Interest Office. "This is a long and painful process for all involved, and one that can be easily avoided by full and timely disclosures."

Contact the [Northwestern University Conflict of Interest Office](#) with questions or concerns.

NUANCE Fest Sept. 18

NUANCE Fest provides an annual opportunity to learn about the high-tech instruments, techniques, and atomic, molecular and nanoscale research taking place at Northwestern University's Atomic and Nanoscale Characterization Experimental Center (NUANCE).

This year's event will be held on Thursday, September 18, from noon until 1:30 p.m. inside the first-floor atrium of Cook Hall.

[Click here to register.](#)

Annual Drug Discovery Symposium Oct. 9

The Center for Molecular Innovation and Drug Discovery (CMIDD) will host its 19th Annual Drug Discovery Symposium on October 9 at the Robert H. Lurie Medical Research Center on the Chicago campus.

The symposium brings together more than 100 researchers from Northwestern and other area institutions. This year's event features a keynote address by **Brian Shoichet**, professor of pharmaceutical chemistry at the University of California-San Francisco. His keynote address, "A Metabolic Code for Chemical Signaling," is scheduled for 2 p.m. and will be followed by a scientific poster session and networking reception.

Researchers interested in attending the event or submitting an abstract for presentation can [register online](#).

Quantum Finding Could Lead to Extremely Fast Computers

In the quantum world, making the simple atom behave is one thing, but making the more complex molecule behave is another story.

Now, Northwestern University scientists have figured out an elegant way to stop a molecule from tumbling so that its potential for new applications can be harnessed: shine a single laser on a trapped molecule and it instantly cools to the temperature of outer space, stopping the rotation of the molecule.

“It’s counterintuitive that the molecule gets colder, not hotter when we shine intense laser light on it,” said **Brian Odom**, physics and astronomy. “We are the first to stop molecular tumbling in such a powerful yet simple way.”

It is not very difficult to trap many types of molecules and hold them precisely in place, Odom said, but they stubbornly persist in rotating just as much as if they were not trapped at all. Using a

customized laser, Odom and his colleagues cooled singly charged aluminum monohydride molecules from room temperature to 4 degrees Kelvin (minus 452 degrees Fahrenheit) in a fraction of a second. The abrupt temperature drop stopped the molecules’ normally persistent tumbling motion in its tracks.

Such control of the molecules’ rotational and vibrational states is essential to using molecules in the construction of superfast quantum computers — machines whose processing power would be exponentially faster than today’s computers. Details were published September 2 in the journal *Nature Communications*.



Brian Odom

[Click here to read more.](#)

Science Café: John Evans and the Sand Creek Massacre

The academic year has started, which means Northwestern’s Science Café is back.

The topic for September’s event is, “John Evans, the Sand Creek Massacre, and the History of Northwestern University.”

The event will feature a panel discussion, including three of the eight members of the John Evans Study Committee, who will discuss the committee’s recent report on the relationship of John Evans to the Sand Creek Massacre of November 29, 1864, in which U.S. Army cavalry slaughtered approximately 150 Cheyennes and Arapahos, most of them women and children.

Evans was the governor and superintendent of Indian Affairs of the Colorado Territory and was traveling in the East at the time of the massacre. In its aftermath President Andrew Johnson instructed him to resign.

Evans was one of Northwestern University’s leading founders, chair of its board of trustees for more than 40 years, and a major donor to the University. The City of Evanston is named for him.

September’s Science Café will be held from 6:30-8:30 p.m. on Tuesday, September 30, at the Firehouse Grill, 750 Chicago Ave., Evanston.



Herskovits Library Adds Jan Vansina Papers

It has been said that renowned historian and anthropologist **Jan Vansina’s** “academic career is virtually simultaneous with the field of African history itself.”

Now Northwestern University’s Melville J. Herskovits Library of African Studies — the largest separate Africana collection in existence — is home to the Jan Vansina Papers, which fill 136 boxes with documents that span the years 1953 to 1994.

A major figure in the study of Africa, Vansina is professor

emeritus at the University of Wisconsin-Madison, where he taught for more than three decades. In his career he published 20 monographs and more than 200 articles and did extensive fieldwork throughout Africa. His methodologies and research into pre-colonial oral tradition helped found the field of African history. As a professor, mentor, author and researcher, his influence has been profound.

[Click here to read more.](#)

Research Around Campus

Ruchi Gupta, pediatrics, found that only one in four students with asthma and half of children with food allergies have emergency health management plans in place at their Chicago Public School, leaving schools inadequately prepared to manage daily needs and handle medical emergencies related to often life-threatening medical conditions. [Read more...](#)

Mark Hersam, materials science and engineering, has created a new type of carbon nanotube solar cell that is twice as efficient as its predecessors. [Read more...](#)

Curt M. Horvath, molecular biosciences, helped identify a biomarker strongly associated with basal-like breast cancer, a highly aggressive carcinoma that is resistant to many types of chemotherapy. [Read more...](#)

Melina R. Kibbe, surgery: vascular surgery, found that surgical researchers rarely use female animals or female cells in their published studies — despite a huge body of evidence showing that sex differences can play a crucial role in medical research. Editors of the five major surgical journals reviewed in the research will now require authors to state the sex of animals and cells used in their work. [Read more...](#)

Nina Kraus, communication sciences and disorders, conducted a study that provides the first direct evidence that a community music program for at-risk youth has a biological effect on children's developing nervous systems. [Read more...](#)

Ken Paller, psychology, found that mindfulness training for individuals with early-stage dementia and their caregivers together in the same class was beneficial for both groups, easing depression and improving sleep and quality of life. [Read more...](#)

Research in the News

Craig Garthwaite, strategy, was mentioned in the *Wall Street Journal*, saying that while the economy is showing signs of a renewed strength, the hangover effect from the 2007-09 recession has likely continued to curb medical spending.

Nora Hansen, breast surgery, was quoted in the *Philadelphia Inquirer* regarding news that many women who have mastectomy don't get breast reconstruction.

Yonggang Huang, mechanical engineering, was among researchers mentioned in the *Maritime Executive* for their work on how octopuses might inspire a new camouflage system.

Nina Kraus, communication sciences and disorders, was featured in numerous national and international publications including *Nature World* for her work showing that musical training can help impoverished children improve their language and reading skills.

Joel Mokyr, economics, was featured in a *Wall Street Journal* story about the state of the American economy.

Honors

Gregory Carpenter, marketing, has won the 2013 Sheth Foundation/*Journal of Marketing* Award for the research that led to his book, *Resurgence*.

Eric D. Donnelly, radiation oncology, was named a 2014 Educator of the Year by the Association of Residents in Radiation Oncology.

Frank Gonzalez-Crussi, pathology, was recently awarded the prestigious literature award "Premio Letterario Merck" for his book *Carrying the Heart: The World Within Us*. The prize recognizes literary works that combine the scientific importance of research with literary writing style.

Jiaying Huang, materials science and engineering, has been awarded the Fissan-Pui-TSI Award by the International Aerosol Research Assembly for his collaborative work regarding aerosol synthesis and processing of crumpled graphene balls.

Charles Manski, economics, has been elected a corresponding fellow of the British Academy, the UK's expert body that supports and speaks for the humanities and social sciences.

Alpesh Patel, orthopaedic surgery, has been awarded the 2015 American Orthopaedic Association's American-British-Canadian Traveling Fellowship.

Ian Savage, economics, was awarded Best Academic Paper at the 2014 Global Level Crossing and Trespass Prevention Symposium at the University of Illinois at Urbana-Champaign.

Scott Sowerby, history, was awarded the Royal Historical Society's Whitfield Prize for the best first book on British history for his work, *Making Toleration: The Repealers and the Glorious Revolution*.

Robert Murphy, director of the Center for Global Health; **Babafemi O. Taiwo**, medicine: infectious diseases; and **Thomas Hope**, cell and molecular biology, were featured in national media coverage, including a spot on *CBS*, regarding the Ebola outbreak in Africa.

Northwestern researchers found that nearly 90 percent of Chicago park-goers said they were satisfied with new healthy-options-only vending machines. The study was covered by *Time Magazine*, the *Chicago Tribune* and other national publications.

Lincoln Quillian, sociology, was quoted in *Bloomberg* regarding the effect that rising suburban poverty has played in the Midwest.

Tanya Simuni, director of the Parkinson's Disease and Movement Disorders Center, was quoted in a *Washington Post* story regarding how patients frequently react to the diagnosis of Parkinson's with surprise and despair.

Research by **Phyllis Zee**, neurobiology, on the benefits of having natural light at work was featured in numerous national and international publications, including on *CNN* and in the *Philadelphia Inquirer*.

Proposal and Award Report: through July 2014

The total amount of award funding received through July 2014 is \$494.1 million, an increase of 12 percent (\$54.6 million) over July 2013. The number of awards thus far this fiscal year (2,466) is up slightly over the prior year to date.

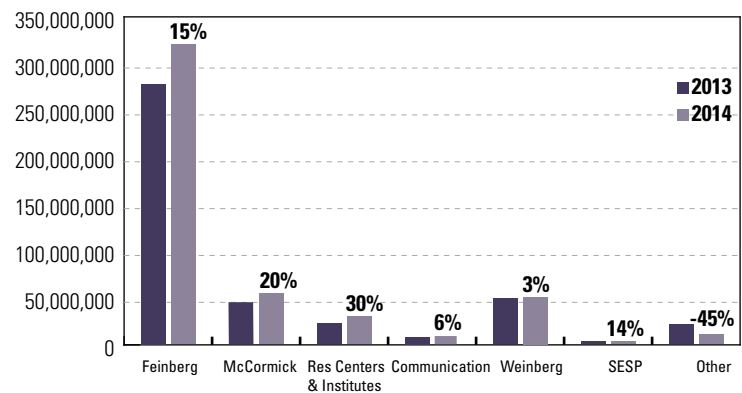
Through July 2014, the dollar volume of awards from federal agencies reflected an increase of 11 percent (\$34.5 million). Awards from industrial sponsors increased by 46 percent (\$26.5 million), while those from foundations have decreased by 9 percent (\$2.4 million). Awards from the state of Illinois have decreased 53 percent (\$4.9 million).

The dollar volume of proposals submitted through June 2014 is \$2.21 billion, an increase of 14 percent (\$276.9 million) over the total reported in July 2013. The number of proposals submitted thus far this fiscal year (3,056) is 6 percent more than last year at this time.

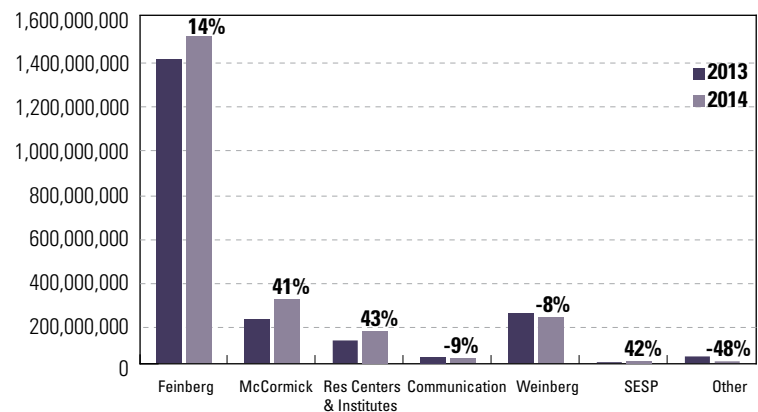
Through July 2014, the dollar volume of proposals submitted to federal agencies grew by 14 percent (\$242.7 million), while those to industrial sponsors rose by 44 percent (\$25.7 million). Proposal activity to state of Illinois agencies reflected a decrease of 47 percent (\$3 million), while those to voluntary health organizations were up by 10 percent (\$4.9 million).

[Click here to access the full report.](#) You will first be brought to the university's single sign-on access page, where you will then need to provide your NetID and password. From the report launching page, find the appropriate report type and select the desired month.

Notable Award Total \$ Comparison - July (FY to date)



Notable Proposal Total \$ Comparison - July (FY to date)



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Published by Northwestern University
Office for Research
633 Clark Street
Evanston, Illinois 60208

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Northwestern Research Newsletter is published the third Wednesday of every month during the academic year.

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