

Office for Research Newsletter

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A Note from the Vice President

Dear Colleagues,

Welcome to the new Office for Research newsletter! We use the term “Northwestern’s research community” to describe our audience for this new venue. We hope to use this newsletter to help build that community: to share information, to acknowledge success and hard work, and, most of all, to remind us that we’re all part of a team that is working to solve society’s problems.

Talk back to us – we encourage dialogue – and let us know whether we’re meeting your needs. Write to me at vp-research@northwestern.edu and let me know what you think, what we should be covering, and where we should be heading.

Jay Walsh

Vice President, Research



Research Grants Set New Record

Northwestern’s sponsored research award volume climbed to \$438.8 million this year, the highest in the University’s history and a 5 percent increase over last year’s record-breaking \$416.4 million.

The higher dollar volume of awards in fiscal year 2008 was fueled by a 10 percent increase (\$28.7 million) from federal agencies, with the largest portion from National Institutes of Health (NIH) grants.

In addition to a significant increase in funding this year, Northwestern ranked 24th among universities in NIH funding for fiscal year 2007, the last year for which rankings are available.

“This was a banner year for Northwestern in terms of research awards,” said Jay Walsh, vice president for research. “These increases are particularly significant at a time when growth in federal research budgets has been minimal.”

Foundation grants and voluntary health organization awards also rose by 23 percent (\$6 million) and 14 percent (\$2 million), respectively. [Full story](#)

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Core Strength: Northwestern's Evolving Shared Facilities

When Philip E. Hockberger, physiology, came to the Feinberg School of Medicine in 1987, he remembers how few shared and core facilities were on campus.

"There were a couple of facilities – the electron microscope, which became the Cell Imaging Facility," he says. "But it was nothing like today when we have 15 cores just as a part of the cancer center alone."

Now between the Evanston and Chicago campuses, Northwestern supports 33 core facilities, which are physical spaces designed to provide complex research equipment and technical support for faculty, students, staff and post-docs. Creating shared facilities is a way to provide equipment by pooling university and external resources that single investigators would not otherwise be able to afford.

In an effort to continue improving and expanding these facilities, Hockberger was appointed the very first director of core facilities in December and started his new position at the beginning of this month. Whereas individual directors who had little collaboration with each other traditionally have managed cores locally, now the directors will work with Hockberger who plans to support an overarching structure to keep all the facilities on the same page. One example of this connectedness is the development of a searchable database to allow researchers from any department to simultaneously search all cores quickly and efficiently to find the equipment and services they need.

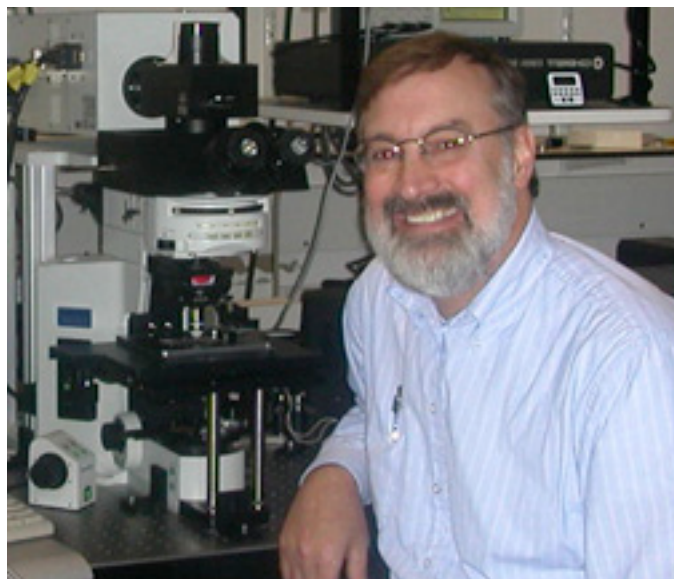
Because technology is constantly changing, Hockberger says the role of facilities is fluid as some outlive their usefulness and are retired while others are developed.

"There are new things that are starting up as we speak," says Linda Hicke, associate vice president for research. "There will be a new imaging facility associated with the Chemistry of Life Processes Institute that will be located in Silverman Hall, and there is a proposal at the Feinberg School of Medicine for a metabolic rodent phenotyping core that will be associated with the new obesity center."

As director, Hockberger works with Hicke to serve as a liaison between Office for Research senior staff and core facilities personnel. One of the challenges is maintaining the cores to make sure they stay current enough to keep Northwestern on the forefront of research and technology.

"The Genomics Core Facility in Chicago has been doing routine DNA sequencing for a long time, but now there is new technology called high throughput sequencing, which can sequence massive amounts of DNA," said Hicke. "This facility received a donation in the past few year to purchase a very large, state-of-the-art piece of equipment."

Hockberger – who created the Laser-Based Microscopy and Digital Imaging Facility in 1995 and currently advises the Multiphoton Imaging Core, which provides equipment, instruction and technical support for the use of multiphoton microscopy – already has new ideas for how to improve shared and core facilities in the coming years.



Hockberger sits in a laboratory at University of Oxford, England in Dec. 2007 where he set up a two-photon microscope. Photo courtesy of Philip Hockberger.

For starters, he plans to implement annual "Shared Facilities Fairs," which will include an opportunity for cores to display their works in a shared space and organize individual open houses so students and post-docs can visit the facilities and see the equipment.

"Our graduate students and post-docs are often unaware of the extent of our cores," Hockberger says. "These fairs will educate students about what's available."

Next, Hockberger plans to require every core to seek feedback through user surveys. And finally he wants to make the cores fiscally responsible and transparent to the administration by using software programs that are designed specifically to track the usage of cores as well as the flow of resources, such as spending and billing.

"We have not had a systematic policy in the past with regard to tracking this vital information, and one of the things my job is aimed at is figuring out how to organize this in a more rational way," Hockberger explains.

Hicke and Hockberger also hope to cultivate collaborations with other academic institutions in the Chicago area. Hicke refers to a mass spectrometry facility supported by the Chicago Biomedical Consortium that serves Northwestern, University of Chicago and University of Illinois at Chicago. Partnering with other institutions allows faculty members to apply for group grants and justify having large research instruments in Chicago.

"Those who use core facilities from any university already think outside the individual investigator's lab, so why not think outside the individual institution?" Hockberger asks. "There are going to be fruitful opportunities in the near future to think bigger and think about ways in which we can leverage our collective strengths to bring additional resources to the Chicagoland area for the benefit of all." ■

Sigma Xi and Provost Office Sponsor Student Travel Grant



Weinberg junior Hatim Thaker. Photo courtesy of Hatim Thaker.

The Northwestern University Chapter of [Sigma Xi](#), the honor society of research scientists and engineers, and the Office of the Provost recently awarded an annual travel grant that sent two students to the Sigma Xi National Annual Meeting and Student Research Conference.

This year's conference travel award was given to Weinberg College of Arts and Sciences junior Hatim Thaker and McCormick School of Engineering and Applied Science senior Kyle Holmberg. Thaker and Holmberg traveled to Washington, D.C., last month with other students from North America and abroad.

The students participated in the Student Research Conference poster competition, joined distinguished researchers, attended career development workshops and participated in mentoring and networking activities, panel discussions and other events. Monetary prizes were presented for outstanding research posters. The students also were awarded complimentary membership in Sigma Xi by the Northwestern University chapter for as long as they attend Northwestern.

Thaker, who is from Singapore, received a medal and a \$100 check for his "superior" poster presentation in the conference's cell and molecular biology category. His poster was titled "Bladder Replacement Therapy Utilizing Autologous Sources of Stem and Progenitor Cells."

"The Sigma Xi travel grant provided the opportunity to present my research interests at a national level," said Thaker, who is pursuing a major in biological sciences with a minor in musicology. "The interactions with the faculty and students of other distinguished institutions granted me a legion of ideas for my own future works."

The competition for the travel grant award is held each spring at Northwestern's [Undergraduate Research Symposium](#).

Northwestern to Integrate Biomedical, Life Sciences

While Northwestern has a long history of strong biomedical and life sciences programs, sometimes having its resources dispersed between the Chicago and Evanston campuses and affiliated hospitals can be challenging.

The University plans to meet this challenge head on through One Northwestern – a comprehensive initiative to integrate its diverse resources and talents in these fields and ensure that the whole is stronger than the sum of its parts.

The initiative is the result of more than a year's work by five task forces of 150 individuals from seven schools on both campuses and affiliated hospitals, led by co-chairs J. Larry Jameson, vice president for medical affairs and Feinberg dean, and Richard I. Morimoto, biochemistry, molecular biology and cell biology.

Provost Daniel Linzer said, "One Northwestern will promote new interactions and science across both campuses and the hospitals, leveraging collective strengths to produce one of the most important life sciences transformations in Northwestern history. This is a major step forward that builds on the significant investments during the last 25 years that have contributed to the growth and stature of our biomedical and life sciences enterprise."

Provost Linzer and President Henry S. Bienen have approved the first four priority areas identified in the planning initiative. They are: to increase hiring coordination, increase connectivity and community, develop more cohesive life and biomedical sciences graduate programs, and rationalize and optimize the current departments, centers and institutes.

A phased implementation of One Northwestern began this winter. For news and updates about the process or more information, please visit <http://onenorthwestern.northwestern.edu>.



Center and Faculty Notes...

Carlos Abril, music studies, co-authored a study that surveyed more than 500 principals from middle and high schools nationwide to examine preteen and teen involvement in music. [Full story](#)

A team led by **Vadim Backman**, biomedical engineering, has shown for the first time -- with partial-wave spectroscopy -- that nanoscale changes are present in cells extremely early in carcinogenesis. [Full story](#)

Mark C. Hersam, materials science and engineering, and his team have developed a technique called density gradient ultracentrifugation to separate double-walled nanotubes from the single-walled and multi-walled nanotubes. [Full story](#)

Richard Gordon, journalism, and a team of students launched a demonstration news interaction site called [News Mixer](#), providing ways for users to discuss local news with other readers and Facebook friends. [Full story](#)

Thomas Hope, cell and molecular biology, and his colleagues discovered that the HIV virus does penetrate a woman's normal, healthy genital tissue to a depth where it can gain access to its immune cell targets. [Full story](#)

Chad A. Mirkin, chemistry, and **Shad Thaxton**, urology, led a study finding a synthetic high-density lipoprotein (HDL) that could help fight chronically high cholesterol levels. [Full story](#)

Adilson Motter, physics and astronomy, published a study in the journal *PLoS Computational Biology* about the similarities between different organisms. [Full story](#)

Erik Sontheimer and **Luciano Marraffini**, biochemistry, molecular biology and cell biology, published a study in the Dec. 19 issue of *Science* about exploiting the base pairing of DNA to provide a defensive tool to be used to fight the spread of antibiotic resistance in bacteria. [Full story](#)

A study led by **Robert Vassar**, cell and molecular biology, has found that when the brain doesn't get enough sugar glucose, a process is launched that ultimately can lead to Alzheimer's disease. [Full story](#)

Northwestern Research In the News, Dec. 1 - Jan. 15

Aaron Cooper, The Family Institute, discussed how the poor economy might positively affect children during the holidays in an *Associated Press* article.

David Dunand, materials science and engineering, discussed fracture-resistant hybrid materials in *Chemical and Engineering News*.

Eli Finkel, psychology, talked about the social dynamics of group dating in the *Philadelphia Inquirer*.

Wendi Gardner, psychology, and Paul Eastwick's study about racism in the virtual world was the topic of an article in *Discover Magazine*.

Mark C. Hersam's, materials science and engineering, research about treating nanotubes to separate their components was the focus of an article in *Chemical and Engineering News*.

Thomas Hope's, cell and molecular biology, research about HIV transmission was the subject of articles in the *Washington Post*, *Chicago Tribune*, *New Scientist*, *United Press International*, *Reuters*, and *U.S. News & World Report*.

Donald Lloyd-Jones, preventive medicine, led a report about the falling death rates from heart disease and stroke, covered by *Reuters*.

Mary Pattillo, sociology, discussed racial segregation in Chicago in the *Chicago Tribune*.

Cheryl Rampage, The Family Institute, discussed holiday materialism in the *Chicago Tribune*.

Luciano Marraffini and **Erik Sontheimer**, both biochemichemistry, molecular biology and cell biology, discovered a gene sequence that protects genes against the transmission of harmful bacteria, *Chicago Tribune*.

Robert Vassar's, cell and molecular biology, findings that blood sugar loss may trigger Alzheimer's disease were reported in *Reuters*, *Agence France Presse*, *United Press International* and the *NBC "Today Show."*

Phyllis Zee, neurology, discussed the importance of sleep in health in the *Boston Globe*.

Honors Corner

Torben G. Andersen, has been elected a **fellow of The Econometric Society**, an elite professional body of global economic experts.

Robert O. Bonow, cardiology, received the **2009 John Phillips Memorial Award** of the American College of Physicians.

Chad A. Mirkin, chemistry, received the **Esselen Award for Chemistry in the public interest** from the Northwestern Section of the American Chemical Society. He also received the *Havinga Medal 2009* from the University of Leiden in The Netherlands.

George C. Schatz, chemistry, received a **2008 Foresight Institute Feynman Prize** in the category of Theory for his theoretical contributions to nanofabrication and sensing.

Eindhoven University of Technology in The Netherlands will award an **honorary doctorate to Samuel I. Stupp**, materials science and engineering, for his research into soft matter applications for complex molecular systems in biomedical technology.

Proposal and Award Reports through Nov. 2008

The total amount of award funding received this fiscal year through November 2008 is \$80.9 million.

The dollar volume of awards to Research Centers and Institutes increased by 107 percent (\$4.6 million), while awards to Weinberg grew by 79 percent (\$3.3 million). School of Law awards also rose by 373 percent (\$1.1 million). The dollar volume of awards to Feinberg and McCormick decreased by 17 percent (\$10.6 million) and percent (\$0.7 million) respectively.

For more details and a complete breakdown of numbers, please visit the [Office for Sponsored Research web site](#) to find the monthly reports. All visitors need a valid Northwestern user NetID and password to log in.

Training Calendar

The Office for Sponsored Research is offering training opportunities involving proposal submissions to [Grants.gov](#) -- the single access point for all grant programs offered by 26 Federal grant-making agencies. Workshops have been designed to explore and demonstrate the complete proposal submission process through the new software. For more information, please visit the [OSR web site](#). For questions or reservations, please contact [David Hull](#).

Chicago Workshop Monday, Jan. 19 9:30 a.m. to 11:30 a.m. Lurie Building, Baldwin Aud.	Evanston Workshop Tuesday, Jan. 20 10 a.m. to noon Main Library, Room B183
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Other training...
CRC Basic Training
Jan. 19, 20, 21 and Feb. 9, 10, 11
8:30 a.m. to 5 p.m.

For a complete schedule of events and details, please visit www.research.northwestern.edu/events

Master's Degree in Science is Subject of Upcoming Symposium

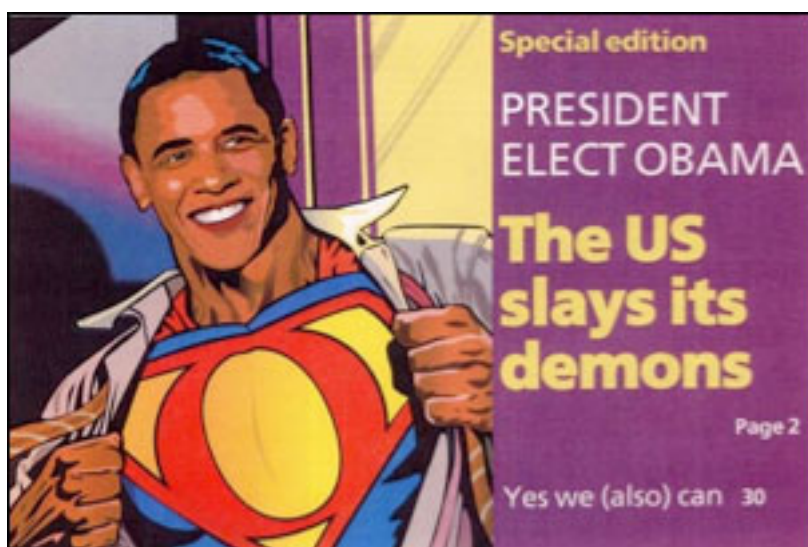
Organized by Kellogg School of Management, "A New Kind of Scientist: Professional Master's Education and U.S. Competitiveness" will address the evolution of the Professional Science Master's (PSM) on the American educational landscape. Moderated by Shelia Tobias, co-author of "Rethinking Science as a Career," discussions will focus on what PSM has been, what it might become, and the forces shaping it throughout. Participants will include Michael Teitelbaum, vice president, Alfred P. Sloan Foundation; Rita Colwell, former director, National Science Foundation; Eleanor Babco, co-director of PSM's Initiatives, Council of Graduate Schools; and Lisa Freehill, executive director, Commission on Professionals in Science and Technology. For more information, please contact [Brad Wible](#).

"A New Kind of Scientist: Professional Master's Education and U.S. Competitiveness"

Saturday, Feb. 14, 8:30 to 11:30 a.m.

Hyatt Regency Hotel, Columbus Hall, Chicago

A part of the [Annual Meeting of the American Association for the Advancement of Science](#)



Packages of Obama items from Africa arrive almost daily at Herskovits Library curator David Easterbrook's office. The Herskovits Library of African Studies has assembled the largest collection of Obama T-shirts, CDs, buttons, bumper stickers, artwork, posters and other materials created in Africa. It has expanded an exhibition of items from its Africa's Response to Obama collection and extended it through Feb. 27.

[Full story](#)

Share your news with us!

Your feedback and suggestions are always welcomed.

Please send news tips, questions and comments to Amanda Morris in the Office for Research Communications:

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www.research.northwestern.edu/orpfc