CONNECTING WITH THE ECONOMY
Northwestern University is a leader in the emerging knowledge economy. With its rich history and brilliant reputation, the university is a consistent source of highly educated people and new, actionable ideas for Illinois and the Midwest.

Northwestern attracts the best-qualified students and most accomplished faculty in a wide range of disciplines from across the nation and around the globe. They impact not only our local culture, but also the regional economy.

Chicago is a global business hub and serves as headquarters to many of the nation’s most respected professional organizations and corporations. Northwestern enhances Chicago’s reputation as a global leader through its commitment to research excellence and focus on interdisciplinary collaboration.
“A research university adds value in two important ways. One is that we educate students – undergraduates and graduates. The other is that we create knowledge through research. What a great university does is recognize areas of societal need and produce graduates and research results to address those needs.”

– Jay Walsh, Vice President of Research, Northwestern University
MAKING A DIFFERENCE

Northwestern University’s Multiple Roles in the Regional Economy

GIVING BACK TO THE COMMUNITY

Since its founding more than 150 years ago, Northwestern consistently has stressed the importance of giving back to Evanston, Chicago and the surrounding region.

Highlights include:

• Northwestern students, faculty and staff volunteer more than 200,000 hours per year to Evanston public schools and nonprofit organizations.
• Since 2004, students at the Northwestern School of Law have performed more than 25,000 hours of public service to numerous organizations in the City of Chicago.
• The University contributes more than $500,000 yearly to local schools, the City of Evanston and local charities.
• Northwestern undergraduates have raised more than $375,000 over the past 11 years for the Evanston Community Foundation.
• Students at the Feinberg School of Medicine provide more than 2,500 hours of clinically related volunteer service annually to many local healthcare-delivery organizations, including Heartland Alliance, Chinatown Clinic, Devon Clinic and Community Health Clinic.

CREATING NEW KNOWLEDGE

With annual sponsored research in excess of $430 million, Northwestern has a long history of leadership in interdisciplinary research programs and centers. Key research areas include materials science, nanotechnology, biotechnology and drug discovery.

Northwestern also works cooperatively with a variety of other major institutions in the Chicago metropolitan area. From cutting-edge research at Argonne National Laboratory and the Fermi National Accelerator Laboratory, to cooperative programs with the Art Institute of Chicago and the Field Museum, Northwestern provides its expertise and resources to strengthen programs at other major institutions.

Recently, Northwestern led in the creation of the Chicago Biomedical Consortium, a collaboration of Northwestern, the University of Chicago and the University of Illinois at Chicago.
RETURNING TAX DOLLARS TO THE REGION/STATE

As a leading private university in Illinois, Northwestern’s total impact on the region and state is significant. The University is an economic engine for the Chicago metropolitan area. From cutting-edge research conducted by faculty to thousands of hours of public service provided annually by students, members of the Northwestern community are vitally involved in improving the lives of Illinois residents.

The Evanston and Chicago campuses employ more than 7,000 faculty and staff with a total payroll of over $585 million. In addition, the University purchases more than $14 million a year in goods and services from private businesses in Illinois.

The University also is a major recipient of federal research funds that brought more than $300 million to Illinois in 2007. These funds provide hundreds of jobs while also helping to contribute to the advancement of knowledge in medical science, nanofabrication, transportation and other areas.

Northwestern has licensed technology to a number of companies in the region in the fields of nanotechnology, materials science and biotechnology. These cutting-edge companies contribute to the tax base and provide good jobs.

ATTRACTION/RETAINING TOP TALENT

Northwestern attracts the nation’s most talented students, creating a valuable resource for the state’s high-wage employers. While approximately one-quarter of Northwestern’s undergraduate students come from Illinois, nearly one-third of all alumni now live in the state, making Northwestern a net importer of top talent.

• Northwestern’s yearly enrollment is approximately 8,000 full-time undergraduate students and 7,000 full-time graduate and professional students.
• Approximately 190,000 alumni hail from Northwestern, including leaders in business, government, law, science, education, medicine, media and performing arts.
Nanotechnology is viewed widely as the most significant technological frontier being explored. Materials and devices at the nanoscale (one-billionth of one meter) hold limitless promise for innovation in nearly every industry of importance today, including energy, healthcare, the environment, national security, transportation and electronics.

Northwestern, through a pioneering collaboration with Argonne National Laboratory’s Center for Nanoscale Materials, established the International Institute for Nanotechnology (IIN). With more than $445 million in nanotechnology research, educational programs and supporting infrastructure, IIN has elevated the Midwest’s standing as a respected center for the development of nanotechnology.

The IIN is located at Northwestern’s Patrick G. and Shirley W. Ryan Hall. This facility was funded in part by grants from the U.S. Department of Health and Human Services and was one of the first federally funded facilities of its kind in the United States.

www.iinano.org
Illinois houses approximately 30 “pure play” nano companies; about one-third emerged from Northwestern labs.

Nano commercialized at Northwestern has created an estimated 200 jobs in Illinois, and Northwestern’s nano start-ups have attracted nearly $330 million in venture funding.

The total state and federal funding through 2008 for Northwestern’s nano research is approximately $350 million.

Northwestern’s prominence in nano has attracted the world’s top nano talent, most recently J. Fraser Stoddart and his team of 20 researchers from UCLA.
ENABLING EARLIER DETECTION AND DIAGNOSIS

Nanosphere, a nanotechnology start-up based on discoveries made at Northwestern by Robert Letsinger and Chad Mirkin, raised more than $100 million in its 2006 initial public offering. Since then, the company has achieved regulatory approval for genetic tests that help identify patients who are prone to excessive clotting. More diagnostics are in development, including a test to identify cancer at a much lower concentration than current technology enables.

www.nanosphere.us

American BioOptics is a medical device company based on technology developed at Northwestern by Vadim Backman. The company is working to revolutionize colon cancer screening with a highly accurate, minimally invasive test based on a novel, light-scattering technology platform. The results eventually will be applied to screening for other cancers.

www.americanbiooptics.com
DEVELOPING NEW TOOLS IN THE BATTLE AGAINST CANCER

Nanotechnology promises to drive advances in oncology and cancer research, leading to near-term patient benefits. Northwestern’s Center of Cancer Nanotechnology Excellence (NU-CCNE), funded by the National Cancer Institute, is a collaboration between IIN and the Robert H. Lurie Comprehensive Cancer Center. NU-CCNE supports multidisciplinary teams of nanoscientists, cancer biologists, engineers and clinicians who develop nanomaterials and nanodevices for cancer therapeutics, drug delivery, imaging, diagnostics and monitoring applications. NU-CCNE also involves individual researchers from the University of Chicago, the University of Illinois at Urbana-Champaign and Yonsei University, South Korea. This collaboration accelerates the pathway from conception to clinical trial for the development of cancer-solving nanotechnologies.

www.ccne.northwestern.edu

International Institute for Nanotechnology researchers are studying how cancer cells migrate from existing tumors to create new tumors in different regions of the body. By creating micrometer-scaled adhesive islands on gold surfaces, they have allowed individual metastatic cells to take on shapes such as the star depicted at left. These shapes provide cues to cancer cells, which respond by concentrating their motility machinery at the star’s tips. This assay lends itself to large-scale screening of cell populations — a problem that has stymied past efforts to find a drug that targets metastatic motility. Image courtesy of Professor Bartosz Grzybowski.

ADVANCING THE STATE OF THE ART
PUTTING KNOWLEDGE TO WORK

ProjectNext is a groundbreaking collaboration among the Kellogg School of Management, the Chicago Urban League and BP America to create a center on Chicago’s South Side to foster African American entrepreneurship. Focusing initially on retail, construction and professional services businesses, ProjectNext will create more African American-owned businesses that will result in more jobs for minority workers and economically improved neighborhoods. Kellogg faculty teach training seminars that include visits to the entrepreneur businesses for evaluations. In addition, Kellogg students mentor entrepreneurs to teach them the technical skills that are the bedrock of any successful start-up business venture.

www.thechicagourbanleague.org

“Working with the Kellogg professors in ProjectNext provided me with new analytical tools that I used to evaluate my business model objectively and gave me the confidence to re-brand my business so that I am better positioned for future success.”

– Twyler L. Jenkins
President & CEO
Strategic Events Solutions
PROVIDING LEGAL ASSISTANCE FOR EMERGING ENTERPRISES

In the Small Business Opportunity Center, Northwestern law and business students work with start-up companies, entrepreneurs and community organizations to provide affordable legal services focusing on economic development and job creation. The center provides a valuable service to the community by helping clients who could not otherwise afford legal assistance.

Top attorneys and law students provide legal advice on matters such as incorporation, copyright protection, zoning and licenses. Clients include “mom and pop” businesses, entrepreneurs and high-tech, e-commerce start-ups.

www.law.northwestern.edu/small-business

PARTNERING WITH MAJOR CORPORATIONS

Northwestern’s McCormick Corporate Partners offers industry the opportunity to participate in cutting-edge research, networking and recruiting by providing unique access to the facilities, faculty and students of the Robert R. McCormick School of Engineering and Applied Science. Companies become participants in research and educational programs, enjoy the benefits of working closely with students and faculty at one of the nation’s top engineering schools, and have access to experts within Northwestern and the industry network.

Through the University’s FastScience® program, companies can access state-of-the-art research and testing equipment, as well as expertise that can help find answers to complex research challenges. Current partners include Abbott Laboratories, Baxter Healthcare Corporation, Ford Motor Company, General Motors Corporation, Honeywell and Procter & Gamble.

www.industry.northwestern.edu/industry/partners.php
LEADING INNOVATION

GENERATING NEW KNOWLEDGE AND TRENDS

The monthly online journal Kellogg Insight highlights research from the highly rated Kellogg School of Management. It is an accessible showcase for key findings in such areas as entrepreneurship, economics, innovation, finance, leadership, marketing and policy. Kellogg Insight features such articles as “(When and How) Do Markets Learn?” and “Games Hospitals Play: How Hospitals Cope with Competition,” and is a forum where students, alumni and the greater business world can share ideas generated within Kellogg.

www.insight.kellogg.northwestern.edu

HELPING INDUSTRY NAVIGATE CHANGE

The Media Management Center helps media organizations and executives negotiate and thrive in an uncertain environment. Through educational programs, conferences and publishing, the center shares its groundbreaking research on the challenges facing media organizations. Affiliated with Northwestern’s Kellogg School of Management and Medill School of Journalism, the Media Management Center collaborates with such partners as Hearst Media and the National Association of Broadcasters to develop solutions and best practices for real-world challenges in areas such as ethics, leadership and editorial excellence.

www.mediamanagementcenter.org
ACCELERATING MEDICAL DISCOVERIES TO PRACTICE

Great advances in knowledge about the basic biology of human life are happening now. Northwestern University’s Clinical and Translational Sciences (NUCATS) Institute is dedicated to “translating” this knowledge into effective new preventive approaches, diagnostics, treatments and cures for human diseases. A remarkable venture, NUCATS encompasses six Northwestern schools and four clinical affiliates with a shared vision to be a major research-catalyzing center. By facilitating collaborative research partnerships that include Chicago-area organizations and community-based clinicians, NUCATS also is taking an active role in improving Chicago-area community health.

www.nucats.northwestern.edu

SOLVING HUMANITY’S MOST PRESSING PROBLEMS

The Global Health Initiative (GHI) aims to combat the scarcity of resources available to treat diseases common to the world’s poor, such as malaria, tuberculosis, polio and HIV/AIDS. Many diagnostics exist, but few address the needs of clinics and healthcare centers in impoverished countries. GHI is an alliance between private sector companies (Abbott Laboratories, Inverness Medical Innovations, IDEO), nonprofit donors, the McCormick School of Engineering and the Kellogg School of Management, and is funded through a four-year, $4.9-million grant from the Bill and Melinda Gates Foundation.

www.kellogg.northwestern.edu/research/ghi

IMPROVING THE QUALITY OF LIFE
CREATING RESULTS
Translating Medical Research into Marketable Products That Help Patients

DISCOVERING BREAKTHROUGH MEDICAL TREATMENTS

Northwestern professors are commercializing promising medical discoveries. Nanotope is a regenerative medicine company with products that help reverse paralysis from spinal cord injury, promote wound healing and aid in the treatment of peripheral artery disease. Nanotope's proprietary technology was developed by Dr. Samuel I. Stupp, Professor of Materials Science & Engineering, Chemistry and Medicine at Northwestern. To be a catalyst for this scientific revolution, Northwestern created the Institute for BioNanotechnology in Medicine (IBNAM). The Institute combines the expertise of faculty members of the Feinberg School of Medicine, McCormick School of Engineering and Applied Sciences, and Weinberg College of Arts and Sciences in a collaborative environment. The Institute performs research in fields such as self-assembly, tissue engineering, genomics, smart drug delivery and other new technologies that can have profound impacts on medicine.

www.nanotope.com
www.ibnam.northwestern.edu
The Technology Transfer Program assists faculty, students and staff in moving academic innovation from the bench to the market. In addition to implementing the Patent and Invention Policy for the University, the Technology Transfer Program also fosters the transformation of novel technologies from the University into new products that benefit the public.

Key components of its mission include:

- Facilitating the commercialization of Northwestern’s innovative technologies for public use and benefit
- Educating faculty, students and staff about what constitutes intellectual property and its timely protection
- Assisting faculty, students and staff in determining the market opportunities of their ideas and technologies
- Structuring and negotiating license deals to generate revenue

**FISCAL 2004–2008 RESULTS**

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**BY THE NUMBERS – TECHNOLOGY TRANSFER PROGRAM SINCE 1994**

- **1,705** invention disclosures
- **1,354** U.S. patent applications filed
- **495** licenses/options executed
- **$907** million license revenue
- **57** start-up companies

*FY08 licensing income does not reflect a one-time payment of $700m for a royalty interest in Lyrica®, a pharmaceutical product discovered at Northwestern and manufactured by Pfizer, Inc.*