

BOSTON

A LEADER IN NIH AWARDS

for

17 CONSECUTIVE YEARS

{ \$23.4 BILLION IN TOTAL NIH FUNDING }



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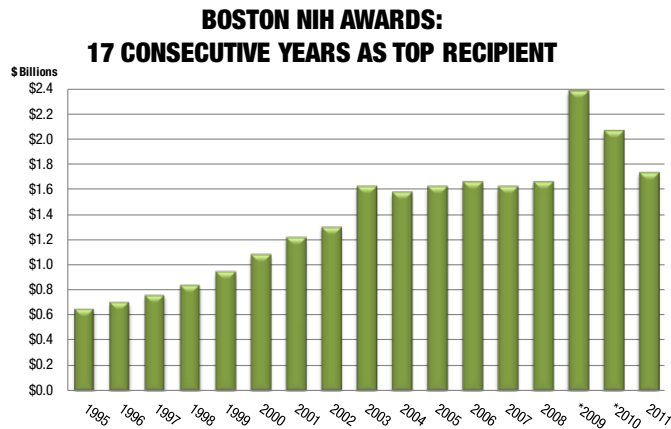
THE NATIONAL INSTITUTES OF HEALTH (NIH)

is the single, largest source of funding for medical research in the world. The NIH is comprised of 27 Institutes and Centers, with the main campus in Bethesda, Maryland, each with a specific agenda focused on particular diseases or body systems. Through the distribution of over 50,000 competitive grants, the NIH is able to further the advancement of scientific knowledge in order to achieve a healthier future. In Federal Fiscal Year (FY) 2011 nearly 80% of the total budget was given to the more than 300,000 research personnel at over 3,000 universities and research institutions nationwide. This is in addition to the 6,000 scientists that work within the NIH's Institutes or Centers. As part of the U.S. Department of Health and Human Services, the NIH is the agency directly responsible for funding biomedical and health-related research across many areas including: medical and academic centers, research universities, hospitals, and pharmaceutical and bio-technology companies. These monies are critical in reducing the exorbitant cost of drug development and clinical trials and play an important role in scientific advancement and job creation.

The primary mission of the NIH is to seek fundamental knowledge about the nature and behavior of living systems and the application of that knowledge to enhance health, lengthen life, and reduce the burdens of illness and disability. It is no surprise then that Boston continues to lead the nation in the total amount of awards received with its diverse range of universities and hospitals devoted to research. By far, the funding mechanism that receives the greatest amount of awards is research grants. Nationally, 88.8% of awards received in 2011 were research grants. However, in Boston 96.4%, or \$1.672 billion, of the total NIH awards were for research grants.

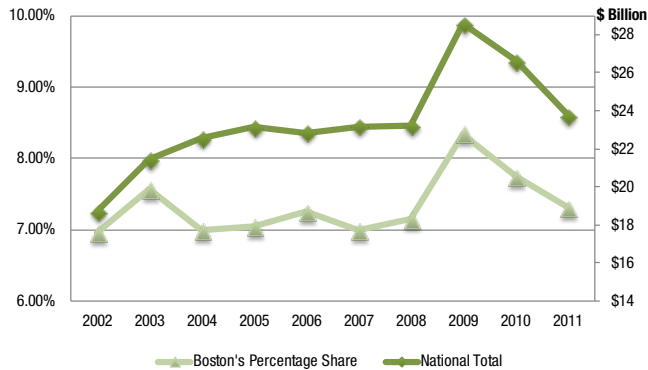
STILL #1

In 2011, Boston *again* led all cities in NIH funding, extending its streak to 17 consecutive years. Boston finished ahead of New York, Baltimore, Seattle and Philadelphia, which ranked numbers two through five respectively. This accomplishment is attributable to Boston's world renowned hospitals, universities, public, private and non-profit agencies, which received over 3,600 grants for a total combined award of \$1.7 billion in 2011. Over the last 17 years, Boston's organizations have received an aggregated amount of \$23.4 billion in NIH funding.



The 2011 awards mark a decrease from the 2009 and 2010 amounts. The awards from these years were enhanced by economic stimulus dollars as part of the emergency funding created by the American Recovery and Reinvestment Act (ARRA). Without the ARRA injection in 2009 and 2010 to the NIH funding stream, 2011 would have been the third highest level over the last 17 years.

BOSTON AND NATIONAL NIH AWARDS



Since 2002, at a time when competition for awards has been increasing, Boston has managed to raise its level of NIH funding, receiving 7.3% of the national total in 2011. This record exemplifies the quality, capabilities and performance of Boston's world-renowned hospitals, universities, and research institutions, as well as illustrates the small but expanding number of private companies and non-profit organizations located throughout Boston competing for NIH funding. As health care, education and research

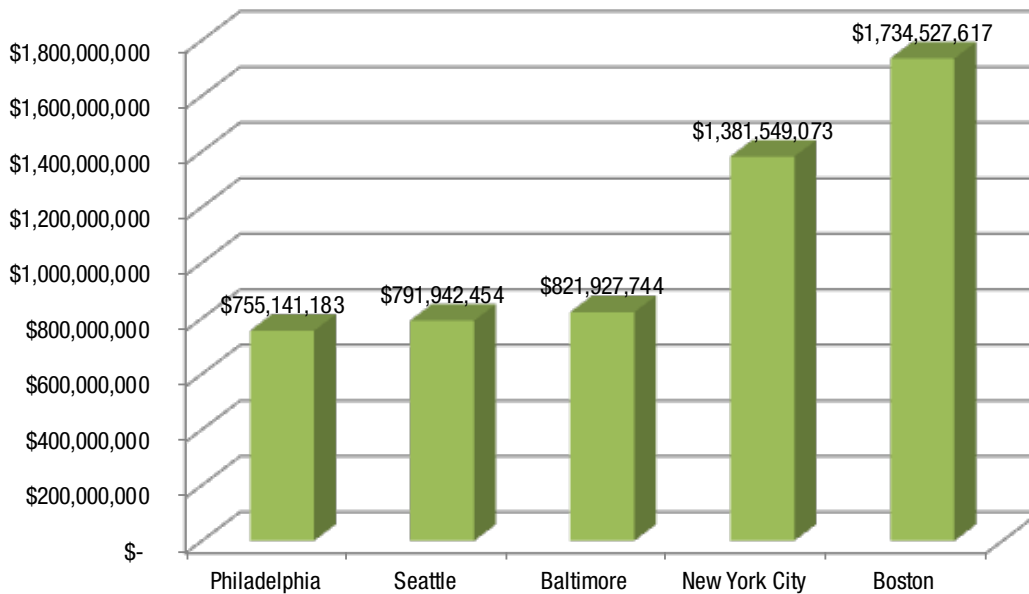
continue to play a fundamental role in an increasingly knowledge-based economy, the medical research being done in Boston provides a crucial and growing segment to the regional economy.

BOSTON LEADS TOP 5 CITIES

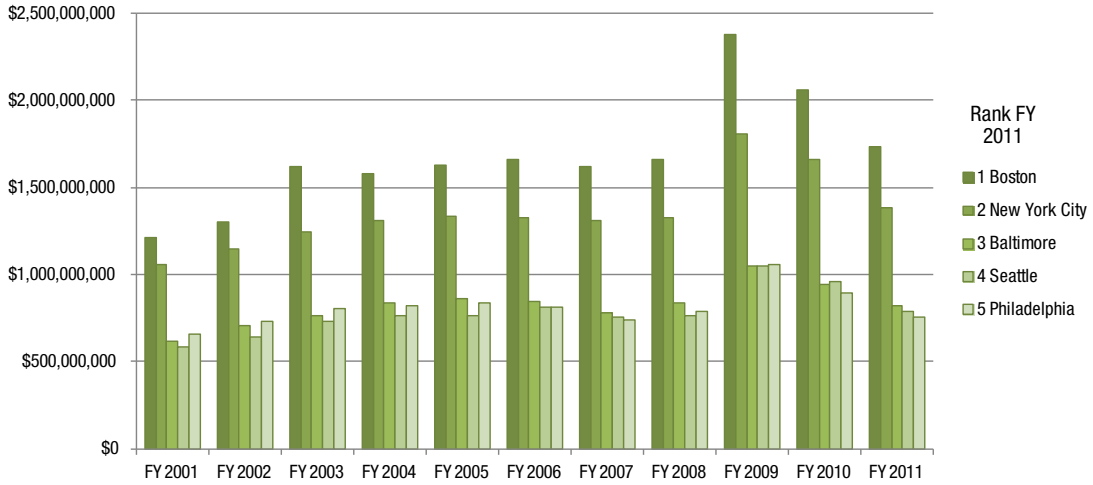


Between 2001 and 2011 Boston amassed over \$18.4 billion in awards, followed by New York with over \$14.9 billion. Over this time period, Boston has witnessed an increase of 42.7% in national NIH awards, while the combined awards of the other top cities of New York, Baltimore, Seattle and Philadelphia have seen an average increase of 28.4% in their annual amount of National NIH funding. Boston has remained highly competitive in receiving NIH grants over these years, setting itself apart from the other top competitors through its commitment to higher education, investments in medicine and attraction for other private and non-profit businesses.

FY 2011 AWARDS - TOP 5 CITIES



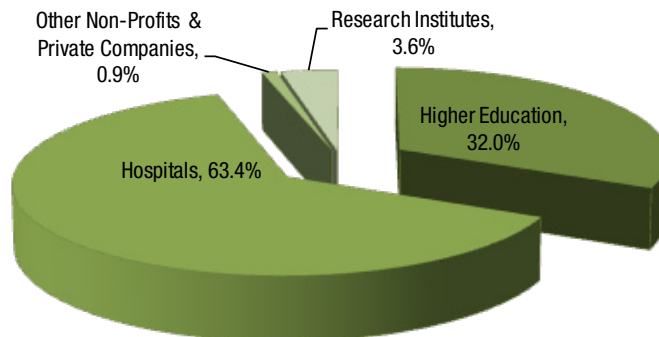
NIH AWARDS TOP 5 CITIES



FUNDING BY ORGANIZATION

NIH awards are dispersed through various kinds of organizations, such as institutions of higher education, private hospitals, research institutes, non-profit organizations, and private companies. Overall, hospitals accounted for over \$1 billion of Boston’s NIH dollars in 2011, 63.4% of the city’s total. Boston has long been regarded as a locality of densely populated college campuses. This component of NIH funding comprises 32% of total awards received in Boston or just over \$550 million. Boston’s research institutes received more than \$63 million, while other private companies, non-profit organizations, health maintenance organizations and health centers received more than \$16 million or just less than 1% of the city’s total.

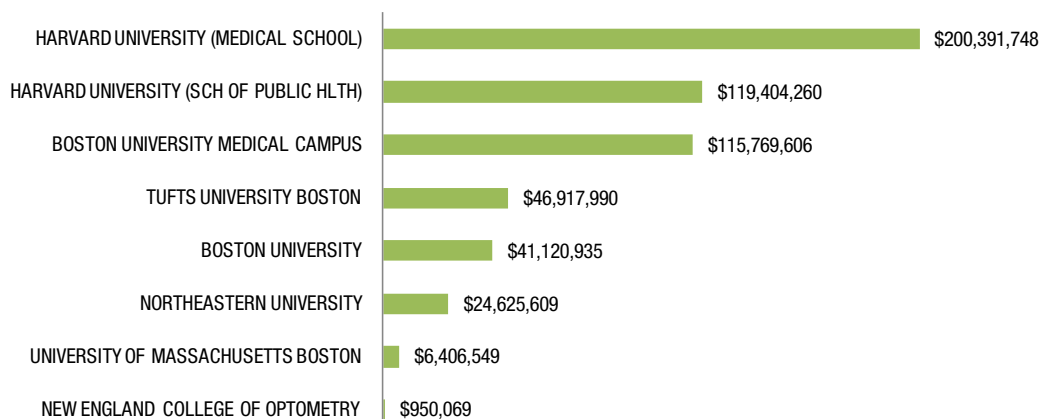
BOSTON FY 2011 NIH AWARDS BY ORGANIZATION



BOSTON'S UNIVERSITIES

Boston's institutions of higher education attracted nearly one-third of the city's 2011 NIH funding. Leading the way was Harvard University's Medical School, receiving over \$200 million in funding, approximately 36% of grant monies awarded to all universities in the city. The Harvard University School of Public Policy attracted 21.5% followed closely by Boston University's Medical Campus at 20.8%.

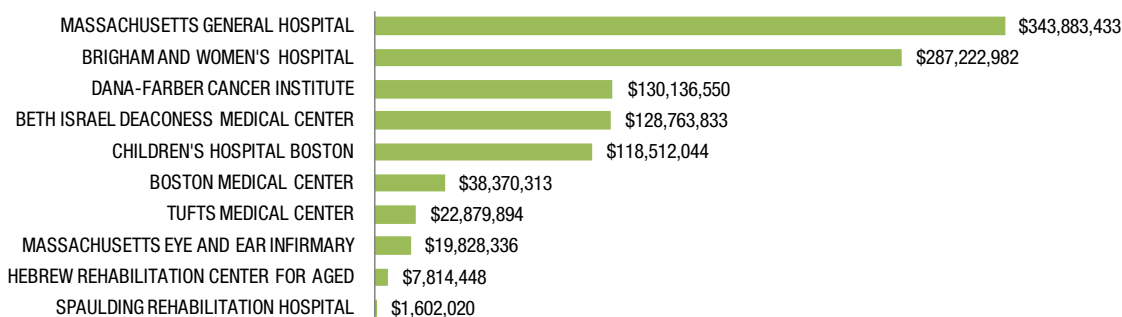
FY 2011 NIH AWARDS: BOSTON UNIVERSITIES



BOSTON'S HOSPITALS

Over the last 11 years, Massachusetts General Hospital (MGH) has been the top recipient of NIH funding in all of Massachusetts. In 2011, MGH received more than \$343 million in grants, its highest mark to date. Of the over \$1 billion in awards to be granted to Boston Hospitals, MGH received 31.3%, followed by Brigham and Women's Hospital (26.1%), Dana-Farber Cancer Institute (11.8%), Beth Israel Deaconess Medical Center (11.7%), and the Children's Hospital of Boston (10.8%). The final 8.2% of awards was divided by the remaining five hospitals.

FY 2011 NIH AWARDS: BOSTON HOSPITALS



THE LONGWOOD MEDICAL AREA

The Longwood Medical Area (LMA) is responsible for 59% of the city's total share of NIH awards. The Brigham and Women's Hospital, Dana-Faber Cancer Institute, Beth Israel Deaconess Medical Center, Children's Hospital and Harvard University's School of Medicine and Public Policy, as well as other health care,

research, and educational institutions are all located in this world famous medical campus. Collectively, the institutions that are located in the LMA total more than \$1 billion in NIH awards. In fact, if Boston was only made up of the institutions in the LMA, it would rank second among cities, behind only New York.

LONGWOOD MEDICAL AREA TOTAL	\$1,024,954,537
BRIGHAM AND WOMEN'S HOSPITAL	\$288,436,449
BETH ISRAEL DEACONESS MEDICAL CENTER	\$131,304,171
DANA-FARBER CANCER INSTITUTE	\$130,136,550
CHILDREN'S HOSPITAL BOSTON	\$118,512,044
JOSLIN DIABETES CENTER	\$20,102,638
IMMUNE DISEASE INSTITUTE, INC.	\$13,767,584
JUDGE BAKER CHILDREN'S CENTER	\$2,899,093
HARVARD UNIVERSITY (MEDICAL SCHOOL)	\$200,391,748
HARVARD UNIVERSITY (SCH OF PUBLIC HLTH)	\$119,404,260

LIFE SCIENCES

The smallest yet still very important portion of the NIH funding in Boston goes to various private life sciences companies, non-profit organizations, and city and state agencies or health centers. In total, 13 organizations received a total of \$16.3 million in NIH awards, which represents 1% of the total Boston NIH funding. Some noteworthy life sciences companies that received amounts of over \$1 million in funding include: Immunetics (\$1.8 million), Arietis (\$1.3 million), and Paratek Pharmaceuticals (\$1.2 million). Of all the non-profit organizations, Harvard Pilgrim Health Care, Fenway Community Health Center and Judge Baker Children's Center received fairly remarkable amounts, \$4.2 million, \$3.1 million and \$2.9 million respectively.

THE IMPORTANCE OF BOSTON

In 2011, the National Institute of Health funded more than 50,000 projects through research grants, training grants, fellowships, construction, and R&D contracts; of all the funding received in the U.S. and its territories, the combined

MASSACHUSETTS DISTRIBUTION OF NIH AWARDS		
FUNDING MECHANISM	AMOUNT RECEIVED	GRANTS
RESEARCH GRANTS	\$2,345,616,467	4,394
TRAINING GRANTS	\$62,919,699	183
FELLOWSHIPS	\$14,133,379	305
R&D CONTRACTS	\$81,930,192	38
OTHER AWARDS	\$3,270,492	10
TOTAL	\$2,507,870,229	4,930

award amount totaled \$23.8 billion. The state that received the largest sum of awards was California, totaling \$3.5 billion. California has a total population more than five times that of Massachusetts. With its large population and concentration of several large urban areas, the size of the golden state plays a significant role in its top ranking among states.

However, Massachusetts and Boston are by far the largest recipients of NIH awards per capita. Boston received over \$2,800 per capita in NIH awards in 2011. By comparison, New York, which ranked second among cities in NIH awards, had a per capita dollar amount just under \$169. Boston is less than 10% of the state population; however, with combined awards totaling more than \$1.7 billion, Boston is responsible for 70.4% of the state's NIH funding. Of the thirteen private hospitals that received NIH grant monies in Massachusetts, the top six were located in Boston, and only three of the thirteen hospitals were located outside of the city.

THE CAMBRIDGE CONNECTION

Institutions located within the city of Cambridge are also large contributors to the total NIH funding received in Massachusetts. Cambridge is home to some of the finest ranked educational institutions in the country, notably Harvard University and the Massachusetts Institute of Technology (MIT). Collectively, Harvard University's undergraduate

CONCENTRATION OF NIH AWARDS IN MASSACHUSETTS

	Grants	Amount Awarded	%
BOSTON	3,641	\$1,734,527,617	70.4%
CAMBRIDGE	562	\$340,477,936	13.8%
COMBINED	4,203	\$2,075,005,553	84.3%
MASSACHUSETTS	5,079	\$2,462,662,255	100.0%

campus and MIT received funding in excess of \$173 million in 2011. Cambridge is also host to a number of bio-tech companies including the Broad Institute which received \$105 million in awards, the Forsyth Institute receiving more than \$11 million, the Whitehead Institute for Biomedical Research, which received \$18 million in funding. Together, Boston and Cambridge combined to receive nearly 85% of Massachusetts NIH awards, or greater than \$2 billion in awards in 2011. There are only a few other metropolitan regions in the U.S., such as the San Diego and the San Francisco-Oakland-San Jose areas, that have combined awards close to the concentration found in Boston-Cambridge.

LOOKING AHEAD

What level of funding does the future hold for Boston? Preliminary budget estimates from the Health and Human Service Department indicate that the Office of Extramural Research will have a total NIH obligation of \$30.869 billion through FY 2012. In the past 11 years, Boston has received an average of 6% of the total NIH obligation. If historical funding trends continue, Boston would receive \$1.857 billion in awards for FY 2012. This would be another record high in dollars awarded for the city. Health care and higher education will continue to play an integral role in combining to encompass a larger presence in the economy for the life sciences and bio-technology industries, making Boston a vanguard of this expanding sector of the U.S. economy.