
BOSTON

THE LEADER IN NIH AWARDS *for*

18 CONSECUTIVE YEARS



CITY OF BOSTON
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Mayor



Boston
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THE NATIONAL INSTITUTES OF HEALTH

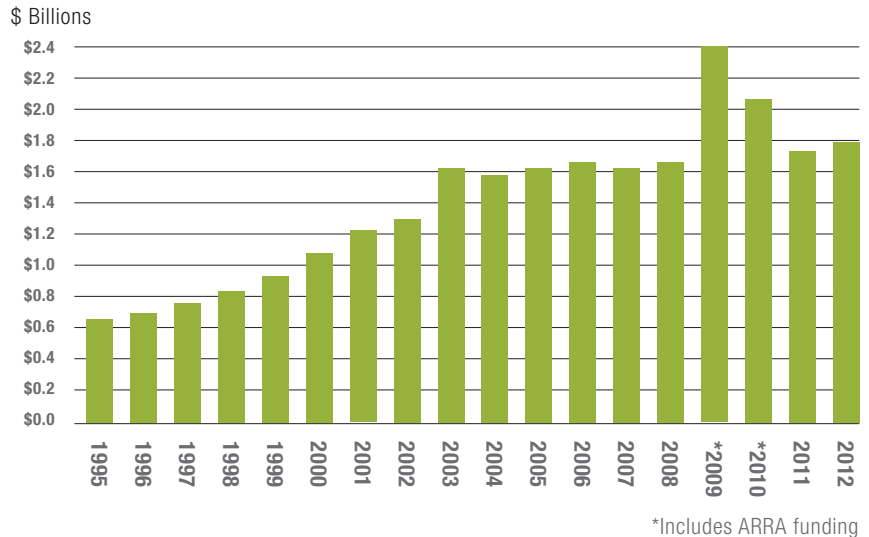
The National Institutes of Health (NIH), a part of the U.S. Department of Health and Human Services, is the largest source of funding for medical research in the world. Its mission is “to seek fundamental knowledge about the nature and behavior of living systems and the application of that knowledge to enhance health, lengthen life, and reduce the burdens of illness and disability.”¹ NIH is comprised of 27 Institutes and Centers, each with a specific agenda focused on particular diseases or body systems.² In fiscal year 2012 (FY12), NIH invested over \$30.9 billion in medical research. More than 80% of this funding went towards extramural awards, or funding provided to researchers and organizations outside the NIH.³ The NIH awarded almost 50,000 grants to researchers at organizations in every state within the U.S.,⁴ creating and supporting hundreds of thousands of jobs.⁵ Thirty-six Boston organizations and companies received over \$1.78 billion in NIH funding. These monies play an integral role in supporting the city’s life sciences and biotechnology industries.

BOSTON #1 FOR 18TH CONSECUTIVE YEAR

In 2012, Boston once again received the most NIH funding of all U.S. cities, with a total of over \$1.78 billion. This extends Boston’s streak as the nation’s leading city in NIH funding to 18 consecutive years. Boston’s hospitals, higher education institutions, research institutes and other organizations and companies garnered nearly 3,700 awards, earning 72% of the NIH funding in Massachusetts and 8% of all NIH funding in the United States.

Since 1995, Boston received over \$25.21 billion in total NIH funding. Funding levels reached a record high in 2009 due to economic stimulus dollars created by the American Recovery and Reinvestment Act (ARRA). During the next two years, NIH funding in Boston decreased as the supplementary ARRA funding ended. However, Boston once again saw an increase in NIH funding from 2011 to 2012 – the first annual increase since before ARRA. Excluding the ARRA funding in 2009 and 2010, 2012 would mark the second highest amount of NIH funding in Boston over the last 18 years.

Boston NIH Awards: 1995-2012



¹ National Institutes of Health. “About NIH,” last modified March 1, 2013, <http://www.nih.gov/about/>.

² National Institutes of Health. “About NIH,” last modified March 1, 2013, <http://www.nih.gov/about/>.

³ National Institutes of Health. “NIH Budget,” last modified September 18, 2012, <http://www.nih.gov/about/budget.htm>.

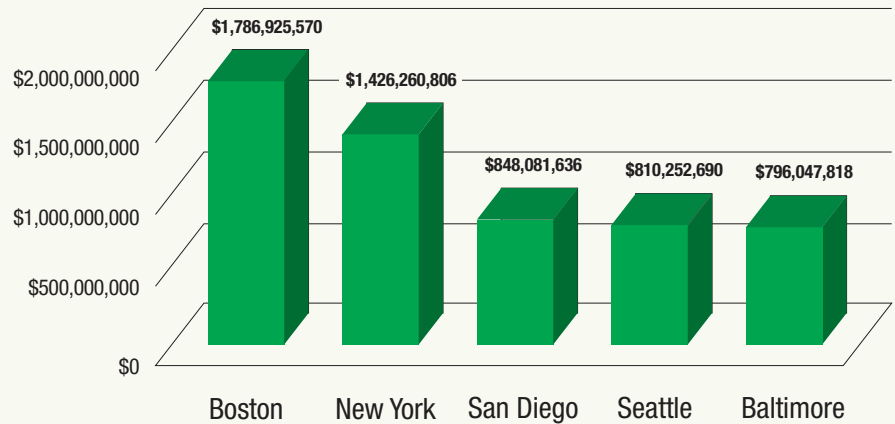
⁴ National Institutes of Health. “NIH Budget,” last modified September 18, 2012, <http://www.nih.gov/about/budget.htm>.

⁵ National Institutes of Health. “About NIH,” last modified March 1, 2013, <http://www.nih.gov/about/>.

TOP 5 CITIES IN THE U.S.

Following behind Boston were New York, San Diego, Seattle and Baltimore, which ranked numbers two through five respectively. Boston finished ahead of New York City by over \$360 million. These five cities are among the nation's life sciences and biotechnology engines, earning slightly over a quarter of the nation's research dollars through NIH.

Top 5 Cities



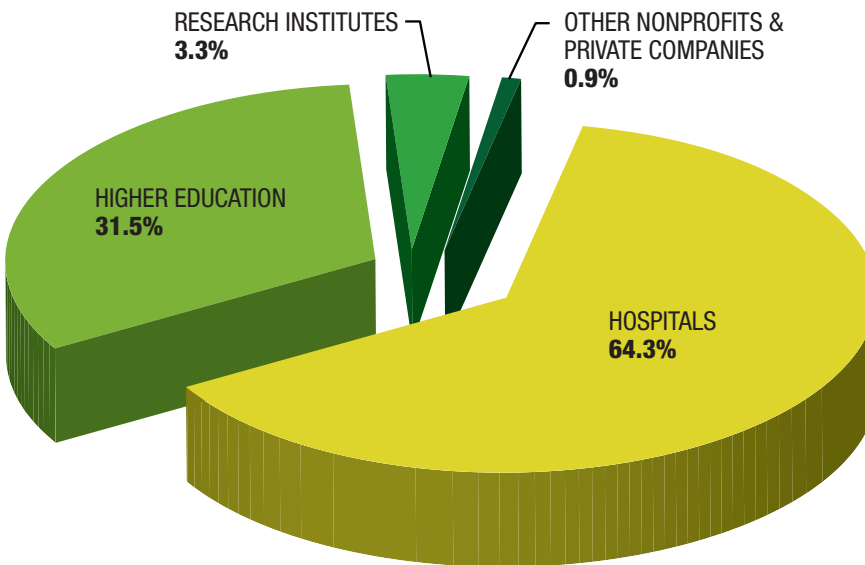
TOP 25 RECIPIENTS IN THE U.S.

Organizations in Boston held three of the top 25 funding recipient spots in the U.S. in 2012. Massachusetts General Hospital, Brigham and Women's Hospital, and Harvard University Medical School ranked 12th, 15th and 24th, respectively. Their combined funding totaled over \$880 million, almost half of Boston's entire NIH funding and 35.7% of all NIH funding in Massachusetts. The top 25 recipients in 2012 were:

Rank	Organization	City	Funding
1	Johns Hopkins University	Baltimore	\$606,763,376
2	University of California San Francisco	San Francisco	\$500,437,073
3	University of Michigan Ann Arbor	Ann Arbor	\$456,305,212
4	University of Pennsylvania	Philadelphia	\$454,975,727
5	University of Washington	Seattle	\$442,509,710
6	University of Pittsburgh at Pittsburgh	Pittsburgh	\$419,497,679
7	University of California San Diego	La Jolla, San Diego	\$394,982,560
8	Washington University	Saint Louis	\$381,158,684
9	Yale University	New Haven	\$370,284,870
10	University of North Carolina Chapel Hill	Chapel Hill	\$367,798,748
11	University of California Los Angeles	Los Angeles	\$360,699,034
12	Massachusetts General Hospital	Boston	\$345,753,439
13	Duke University	Durham	\$342,675,382
14	Stanford University	Stanford	\$334,539,989
15	Brigham and Women's Hospital	Boston	\$332,521,349
16	Vanderbilt University	Nashville	\$319,977,234
17	Columbia University Health Sciences	New York	\$315,357,565
18	Emory University	Atlanta	\$263,600,497
19	University of Minnesota Twin Cities	Minneapolis	\$243,472,794
20	University of Wisconsin Madison	Madison	\$229,863,895
21	Scripps Research Institute	La Jolla, San Diego	\$223,561,477
22	Fred Hutchinson Cancer Research Center	Seattle	\$222,959,739
23	Baylor College of Medicine	Houston	\$208,449,384
24	Harvard University (Medical School)	Boston	\$202,633,266
25	Mayo Clinic	Rochester (MN)	\$202,050,809

FUNDING BY ORGANIZATION TYPE

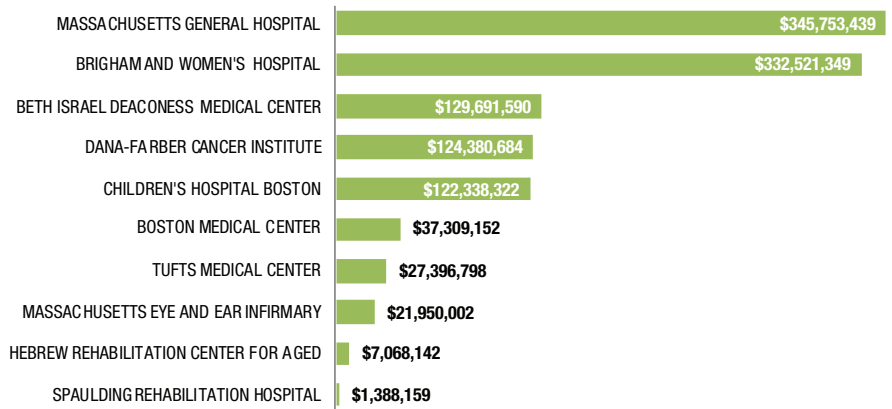
NIH provides funding to a wide range of organizations, including hospitals, colleges and universities, research institutes, nonprofit organizations and private companies. In 2012, 64.3% of Boston's NIH funding was awarded to the city's hospitals (almost \$1.15 billion). Higher education institutions received the second most funding at over \$562.5 million, or approximately 31.5% of the city's total funding. The remaining awards (less than 5%) were provided to a combination of nonprofit organizations, health centers, biotechnology companies, and other private companies.



HOSPITALS

Hospitals received by far the most NIH funding among all organizations in Boston. In fact, Massachusetts General Hospital (MGH) and Brigham and Women's Hospital are the top two hospitals in the nation in NIH funding. In 2012, 10 Boston hospitals were granted 2,417 awards, amounting to over \$1.1 billion—64% of the city's total and 47% of the state's total. The total funding amount for Boston's hospitals alone is greater than that of all grantees combined in every other city except New York. For example, San Diego, the 3rd highest recipient of NIH funding, received a total \$848 million across all recipient organizations.

Boston Hospitals

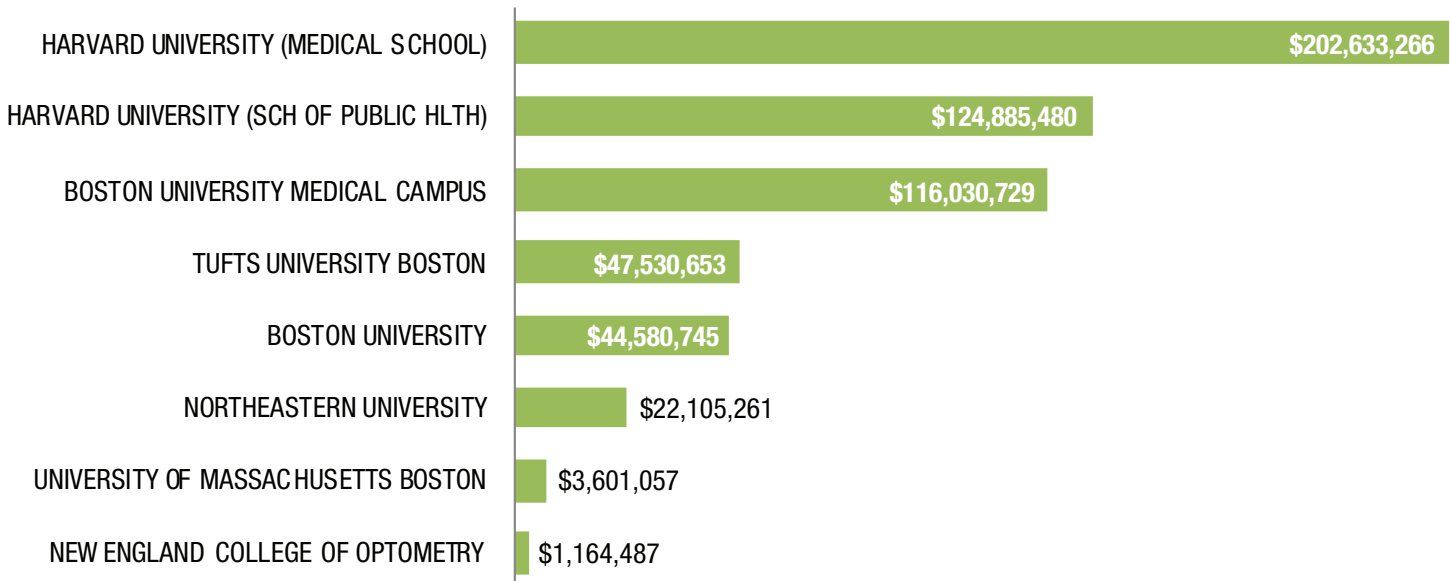


Among the prolific community of hospitals in the city, MGH stands out as the top recipient of NIH funding in the entire state, a title it holds for the 12th consecutive year. MGH alone received a total of \$345 million in grants in 2012, surpassing its 2011 amount of \$343 million. The funding received by MGH comprises 30% of all NIH awards to hospitals in Boston, followed by Brigham and Women's Hospital (29%) and Beth Israel Deaconess Medical Center (11%). The last 30% of hospital awards was divided among the remaining seven hospitals.

HIGHER EDUCATION INSTITUTIONS

The second largest cohort of NIH awards was granted to Boston's world-class higher education institutions, a group that was given over \$562 million, or 31% of the city's total awards, in 2012. Harvard University's Medical School and School of Public Health led their peers in award amounts, receiving 36% and 22% of funding awarded to higher education institutions, respectively, followed closely by Boston University's Medical Campus (21%).

Boston Higher Education



RESEARCH INSTITUTES AND OTHER ORGANIZATIONS

A collection of research institutes received 3%, and other organizations the remaining 1%, of Boston's NIH awards in 2012. Among the five research institute recipients, the Joslin Diabetes Center and Schepens Eye Research Institute received \$17.6 million and \$13.7 million respectively; Frontier Science, a nonprofit research foundation, followed with \$12.8 million. Of the 13 nonprofits and private corporations that were given NIH funding, Harvard Pilgrim Health Care (\$4.6 million), Fenway Community Health Center (\$2.7 million) and Judge Baker Children's Center (\$2.6 million) were the top recipients. Two other organizations—biotechnology companies Arietis and Immunetics—were also granted over \$1 million each.

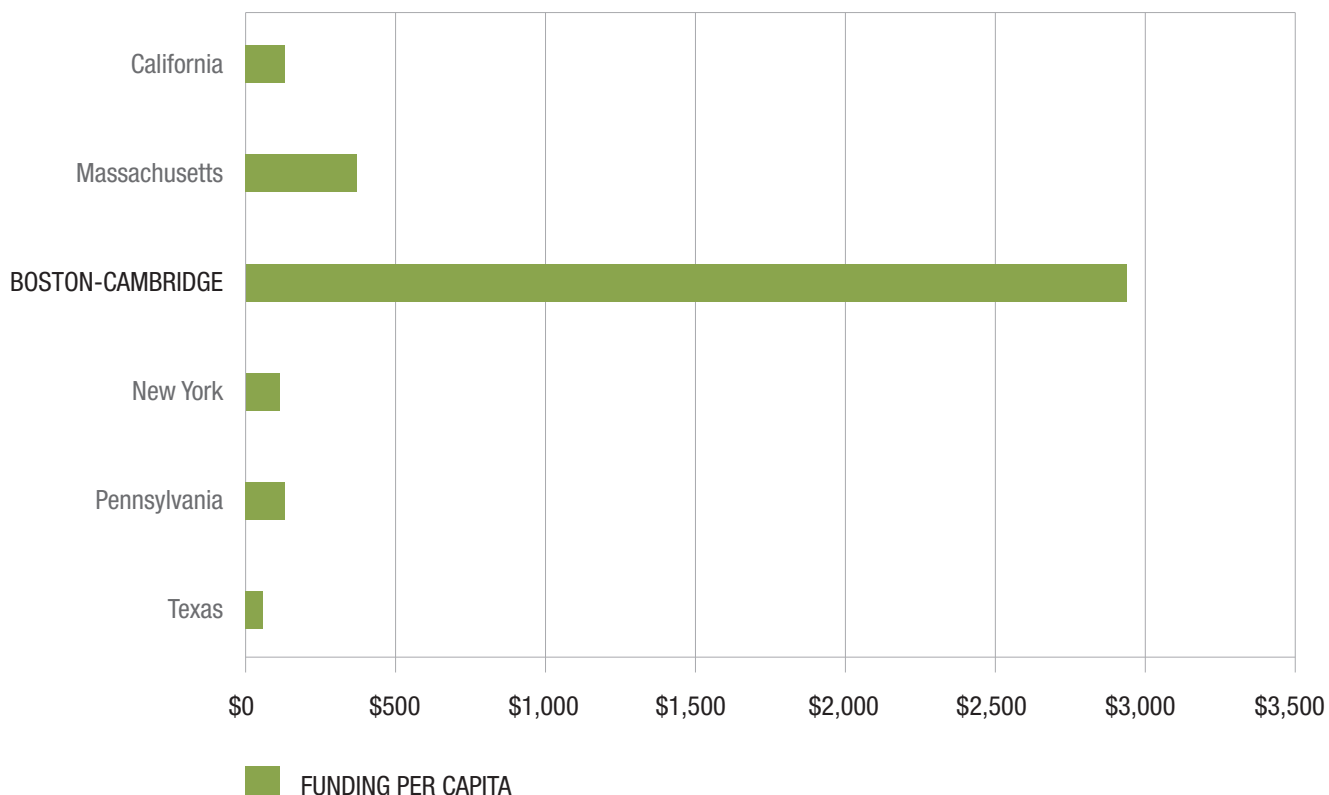
THE BOSTON-CAMBRIDGE POWERHOUSE

Another major recipient of NIH awards each year is found just across the Charles River. Cambridge is home to some of the most respected educational institutions in the country, including Harvard University and the Massachusetts Institute of Technology (MIT). In 2012, these universities received over \$165 million in funding—almost half of Cambridge's NIH awards. Another 10% of Cambridge's NIH funding was granted to research institutes like the Whitehead Institute for Biomedical Research (\$19 million) and the National Bureau of Economic Research (\$14 million). The remaining 40% was awarded to various biotechnology and pharmaceutical companies, as well as nonprofit organizations like the Broad Institute (\$111 million) and the Forsyth Institute (\$12 million).

NIH funding in Massachusetts is highly concentrated in the Boston-Cambridge area. The awards given to organizations in these two cities—over \$2 billion in total—accounted for almost 86% of those given to the state in 2012. In fact, funding for recipients in Boston and Cambridge, when combined, exceeded that for every state in the country except California. Although California received over \$3 billion in NIH funding in 2012, it is more than five times as populated as Massachusetts. NIH funding per capita in California in 2012 was about \$90, compared to Massachusetts' \$377 and Boston-Cambridge's whopping \$2,937.

State	Funding
California	\$3,334,325,339
Massachusetts	\$2,470,036,857
New York	\$1,998,489,889
Pennsylvania	\$1,431,589,539
Texas	\$1,040,898,519

Boston-Cambridge Vs. Top 5 Receiving States



LOOKING AHEAD

The life sciences and biotechnology sector continues to be a driver of Boston's economy, and NIH funding is key to its success. In 2012, Boston's NIH funding supported an estimated 24,502 jobs.⁶ However, due to spending cuts that went into effect on March 1, 2013 through the Budget Control Act of 2011, NIH funding may look very different for the U.S. in fiscal year 2013 and is difficult to predict at this time. Francis S. Collins, Director of the NIH, stated that the organization will lose \$1.6 billion, or 5.1%, of its total budget.⁷ These funding cuts will have negative consequences on the economy overall. United for Medical Research, a coalition of the nation's leading scientific research institutions and health advocates, estimated that the cuts will result in a loss of 1,736 jobs in Massachusetts alone.⁸ As a result, those in the life sciences and biotechnology sector in Boston have expressed great concern over the anticipated reduction of grant availability.

“Because we receive three times as much per capita in NIH funding as the next closest state, we are at risk of seeing a disproportionate negative impact from any funding cuts related to sequestration or other federal budget cuts. Cuts to this vital funding of early stage research will have significant long-term effects on the pipeline of cutting-edge research and development we are known for.”

—ROBERT K. COUGHLIN, PRESIDENT & CEO, MASSACHUSETTS BIOTECHNOLOGY COUNCIL (MASSBIO)

⁶ According to United for Medical Research, Massachusetts' NIH funding supported 34,031 jobs in 2012. As noted earlier, Boston received 72% of NIH funding in Massachusetts. Our estimate assumes that Boston's NIH funding supports 72% of these jobs. <http://www.unitedformedicalresearch.com/state-by-state/>

⁷ Dan Vergano, "Science faces sequestration cuts," *USA Today*, February 25, 2013.

⁸ United for Medical Research, <http://www.unitedformedicalresearch.com/state-by-state/>.



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