

## Northeastern bio-corridor poses challenge to California

Determined to establish its credentials as a leading US bioscience hub, the Economic Alliance of Greater Baltimore undertook an investigation comparing the Northeast US Bioscience Corridor with other regions, in particular California. From its findings Brad S McDearman, Executive Vice President of the Economic Alliance of Greater Baltimore, argues the case for the Greater Baltimore and the Washington-Baltimore region.

There has been a tremendous amount of debate over how cities, metro areas, and even countries compare in the global biosciences market. That debate may stem, in part, from the fact that there has been no real agreement over exactly what is 'bioscience', how bioscience markets grow, or what a 'successful' bio market looks like.

With all of those issues in mind, the Economic Alliance of Greater Baltimore published a report in 2007 entitled *Biosciences in Greater Baltimore*. This report is designed to produce a clear and comprehensive picture of where Greater Baltimore and the entire Washington-Baltimore region stand with respect to the biosciences.

Most experts contend few metro areas have the 'perfect storm' of ingredients required to support a dynamic bioscience cluster. The factors large hubs do have in common include: a highly educated population; a strong base of universities and institutes whose scientists pursue new research and discovery; access to capital to fuel business formation and growth; one or more existing, large bioscience firms; an entrepreneurial culture, and an existing community of growing biotechnology firms.

How do Greater Baltimore and the Washington-Baltimore region stack up for these attributes and what are the major bioscience hubs in the US? To answer this, the region was benchmarked against 15 markets known as bioscience

**The Northeast US corridor from Washington to Boston has a strong claim to having the greatest concentration of bioscience firms and employment in the world.**

hubs for a wide variety of factors. In-depth interviews were also conducted with over 45 bioscience leaders in the Greater Baltimore/Central Maryland area.

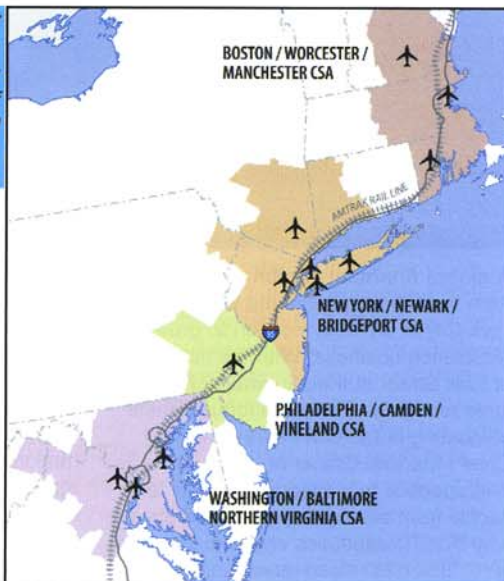
### Key report findings

#### Current bioscience firms and employment

The report yielded impressive results for Washington-Baltimore's bioscience employment. Using the most reliable and reputable sources of data, Washington-Baltimore ranks third for biotechnology firms, fifth for biotechnology employment, third for research, testing and labs employment, eighth for pharmaceutical employment, and fourteenth for medical equipment and device employment. When combined, these numbers place the region among the top bioscience centres in the US.

#### Smart market

Recent national reports produced to evaluate the bioscience industry stress the critical importance of universities and research institutions to the success of



regional clusters. These institutions attract research scientists, doctors, and other intellectual capital, and NIH and other funding. Additionally, they are responsible for 'seeding' the most successful bioscience regions with start-up companies based on new discoveries. Given those criteria, Washington-Baltimore represents a strong opportunity market with a powerful base of institutions and scientists focused on research and discovery. It ranks first among the top 15 metro areas, with 18.5 percent of the population over 25 years old holding advanced degrees. It ranks first in professional, scientific and technical services, employment concentration and growth. It is also home to leading R&D universities like Johns Hopkins (which ranks first in the US in R&D funding) and the University of Maryland. The region ranked third among the benchmark metro areas for annual NIH awards, with \$1.45 billion received in 2003.

#### Fuel for growth – venture capital and other funding

Bringing a biotechnology product to market can be a long, arduous process, often costing \$100 to \$400 million or more and many years to take a product through Phase III trials. Venture capital and other sources of funding are the fuel needed to help a company gain FDA approval and start distributing a product.

California Bioscience Corridor		Northeast US Bioscience Corridor
1174	Biotech firms*	1588
51,050	Biotech employment*	88,380
62,000	Research, testing and labs employment**	105,603
38,921	Pharmaceuticals and medicine employment**	91,008
67,634	Medical devices and equipment employment**	58,420
168,555	Total biosciences employment**	255,031
\$8.08 billion	Total venture capital investment (2002 to 2006)	\$8.1 billion
41.5%	% of total US venture capital invested (2002 to 2006)	41.6%
628	# of venture capital deals (2002 to 2006)	683
609	Daily air flights within corridor	866

Source: Economic Alliance of Greater Baltimore assessment.

\*(R&D in Life Sciences - NAICS 5417102) 2002 Economic Census, September 2005;

\*\*Broader biosciences definition from *Growing the Nation's Bioscience Sector: State Bioscience Initiatives*, 2006; Battelle;

Venture capital: PriceWaterhouseCoopers/Moneytree Report; Air Travel: OAG, February 2007

Across the US, VC funding for biotechnology increased from \$1.2 billion and 234 deals in 1996, to \$4.5 billion and 423 deals in 2006.

The Washington-Baltimore region ranks sixth among the top US bioscience regions for venture capital with over \$990 million invested in biosciences from 2002 to 2006. In terms of both dollars and deals, the region ranks first among top bioscience markets for growth in VC investment.

Over 85 percent of VC invested in the Washington-Baltimore region from 2002 to 2006 went to firms based in Maryland.

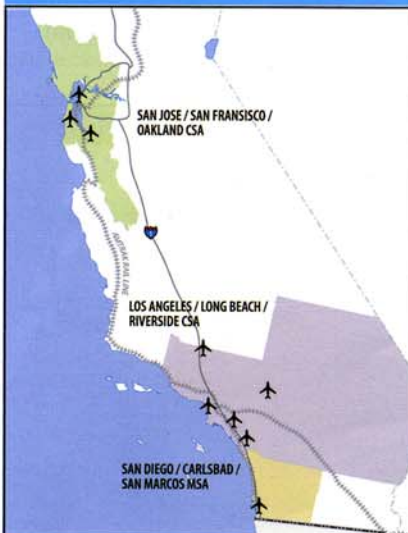
### *Region's optimal location and the Northeast US bio-corridor*

Traditionally, California is viewed as the 'market' with the greatest concentration of bioscience firms and employment in the world. However, the Northeast US corridor from Boston to Washington has an even stronger stake to this claim, and Greater Baltimore is strategically located at the centre of this corridor.

During interviews for the report, Maryland bioscience leaders stressed the importance of the region's Northeast US location because it provides them with ready access to partners, clients, and resources throughout the corridor and connects them globally. This made us wonder: if bioscience firms view this as one, connected 'mega market', how would the Northeast US Corridor stack up to the California market?

The distance from Boston to Washington is 442 miles, and is considered to be many separate markets. This is actually shorter than the 502 mile distance between San Francisco and San

**The 502 miles between San Francisco and San Diego are considered to be one 'California' market.**



Diego by 60 miles, and yet these cities are considered to be one 'California' market.

How well connected is the Northeast US corridor? More than 850 daily air flights connect metro areas to each other in the Northeast US. Frequent Amtrak rail services connect Baltimore-based firms to Washington, DC, in 35 minutes, to Philadelphia in one hour, and to New York in two hours ten minutes. Bio firms based in Maryland can go to New York for a day of meetings in the morning and be home in Baltimore in time for dinner that night.

In terms of employees, the Northeast US Bioscience Corridor has over 255,000 employed in all bioscience firms, while California has 168,000. The Northeast US has more core biotechnology firms (1588) and employment (88,380) than California, which has around 1100 firms and 51,050 employed.

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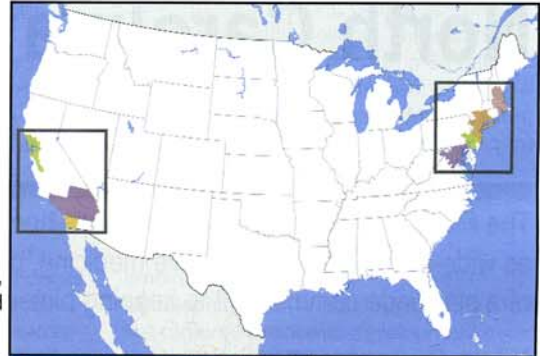
The same amount of venture capital, \$8.1 billion, was invested in bioscience firms in each of the two regions from 2002 to 2006. Over 83% of all venture capital invested in US bioscience firms from 2002 to 2006 took place in these two coastal corridors.

Greater Baltimore has an optimal location in the middle of the Northeast US biosciences corridor, yet it has business and living costs that are lower than neighbouring regions. This puts Greater Baltimore ahead of similarly sized metros that are not located in the west or east coast bioscience corridors.

### **Opportunity market / looking ahead**

The Washington-Baltimore region has established itself among the top bioscience hubs in the US. Within this region, Greater Baltimore offers strong growth opportunity based on its research capacity, relatively lower cost of business and living, the opening of new bio parks at Johns Hopkins and the University of Maryland, and a growing set of bio firms.

A key finding that came as a result of interviewing the region's bioscience



**A comparison of the California bioscience corridor with the Boston to Washington corridor throws up some interesting results**

leaders was that bioscience firms view themselves as operating in a global market. They do not really view bioscience growth as a competition to attract new companies from other geographic regions, but as a Darwinian, organic process that leverages assets and relationships to generate growth and critical mass based on research and discovery from within their regions. This mass will develop over time and serve as a magnet to attract talent, new firms, venture capital, infrastructure and resources. Likewise, large pharmaceutical firms are increasingly interested in acquiring proven biotech firms to fill their product pipelines, as opposed to setting up new R&D facilities. They are also increasingly risk averse and depend more on smaller firms to do the ground-breaking R&D work.

According to local bioscience leaders, the economic development support functions most critical to bioscience firms are:

- Financial investment and support;
- Networking/connections;
- Flexible, inexpensive space.

Based on these priorities, the region is a very strong opportunity market. Bioscience firms in this region already possess an enviable location in the Northeast bio-corridor, their cost of doing business is lower than in other regions in the Northeast, and they are in close proximity to some of the strongest research and development institutions in the world. With its many incubators, affordable office space, and access to human capital, Greater Baltimore, and the entire Washington-Baltimore region, is well positioned to fuel more organic growth and build on its already strong bioscience base.

**LSC**

A copy of the *Biosciences in Greater Baltimore* report is available on the Economic Alliance of Greater Baltimore web site:

[www.greaterbaltimore.org](http://www.greaterbaltimore.org)