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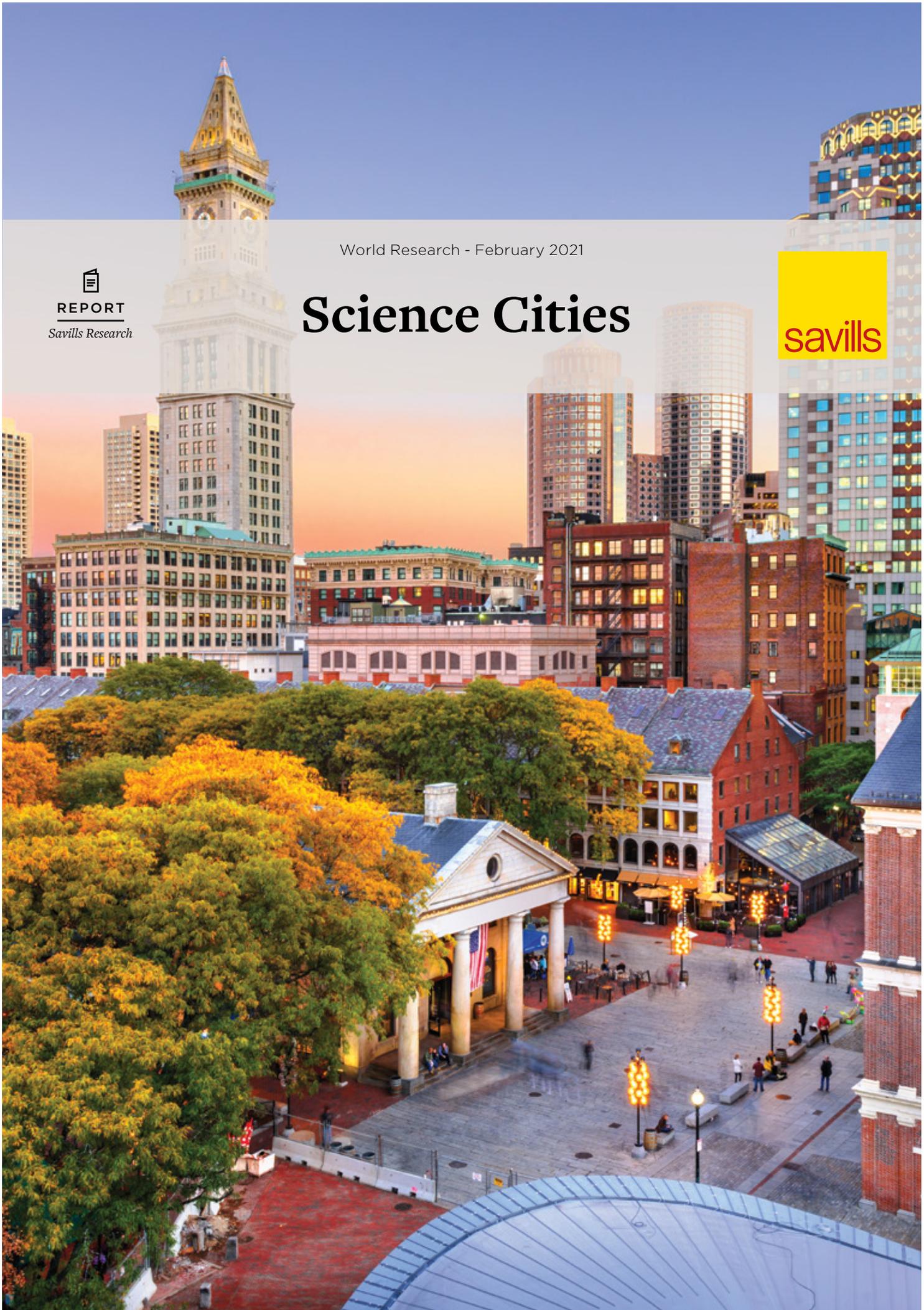


**REPORT**

*Savills Research*

# Science Cities

**savills**



**Human health has never been higher on the global agenda. We identify the cities that are leading in life sciences**

The Covid-19 pandemic has brought the life sciences sector to the fore. The development of vaccines in record time have made companies such as Novovax, BioNTech, and Sinovac household names. Though attention has grown in recent months, the sector has been driving innovation and discovery for decades. Record funding has flowed into the sector, with venture capital (VC) into life sciences rising by 69% last year.

This money has channelled into the leading global centres for life sciences. In this report, we identify the top 20 in the world and assess what makes them successful places to establish and grow life science businesses. These are places that bring together universities, hospitals, government and private business to generate the spark that fuels this knowledge-intensive industry.

While US cities dominate, led by Boston (a global knowledge hub and funding magnet) cities in China, the UK, Japan, Germany, Switzerland, France, Singapore, Australia and Ireland are all major players. Many offer cost advantages to occupiers without sacrificing access to skills, funding and expertise.

These cities, large and small, compete for business. Life sciences is no longer the preserve of out of town campuses. Vibrant urban centres are now also in demand as ‘a place to be’ in a bid to attract the best and brightest. Big tech players have entered the sector, blurring the lines between the tech and life science clusters.

The challenge for the real estate industry, meanwhile, is supplying property that meets the particular requirements of occupiers in this space. The delivery of labs, incubator and R&D space through to major headquarters will enable critical facilities to operate and grow without interruption.

# Science Cities highlights



■ Boston is our top-ranked Science City, a higher education powerhouse and global life sciences hub. The San Francisco Bay Area and Seattle, both benefiting tech sector cross-pollination, round off the top three.



■ US cities dominate our rankings and account for seven of the top 10, thanks to concentrations of funding and a vast domestic market. China and the UK are also represented in the top 10, led by Shanghai (6th), Oxford (9th) and Cambridge (10th).



■ Talent-rich cities outside the US look good value to occupiers. Scientist salaries in San Francisco, at \$94,000, are double those of Cambridge and Oxford in the UK, for example.



■ Lab costs range from \$113 per sq ft in London to \$6 per sq ft in Suzhou, China. Shortage of space in some cities sees labs rents at a premium over traditional office space.



■ In a fiercely competitive global market for talent, city attractiveness matters. The Science Cities that offer the best balance of cost of living, quality of life, safety and environmental quality include Singapore, Sydney, Oxford and Mainz, Germany.



- |                 |                         |              |              |           |
|-----------------|-------------------------|--------------|--------------|-----------|
| 1 Boston        | 5 New York              | 9 Oxford     | 14 Mainz     | 19 Dublin |
| 2 San Francisco | 6 Shanghai              | 10 Cambridge | 15 Singapore | 20 Suzhou |
| 3 Seattle       | 7 Philadelphia          | 11 Beijing   | 16 Basel     |           |
| 4 San Diego     | 8 Research Triangle, NC | 12 Tokyo     | 17 Paris     |           |
|                 |                         | 13 London    | 18 Sydney    |           |



Sophisticated consumers are driving demand for greater control over their own care

# The global growth of life sciences

Demographic change, rising healthcare spending and technological advances underpin global growth in life sciences

## What are life sciences?

Life sciences include fast-growing applied sciences such as cell & gene therapy (CGT), genomics, and biotechnology. An R&D intensive sector, technological advances have accelerated progress and opened up new avenues to improve human health.

Real estate requirements are diverse. They range from specialist lab space, to start-up incubators, to major headquarters with traditional office space. Unlike some other industries, life sciences can't be done from home, so the sector is resilient to wider changes in working practices.

The breadth of occupier requirements, coupled with their positive growth prospects, makes life sciences particularly appealing to property investors.



While the pandemic has brought life sciences into the spotlight, a number of core fundamentals are underpinning the sector's global growth and will drive its development in the years to come.

## Trends underpinning the life sciences sector

### Demand-side



#### Ageing populations

By 2050, 16% of people in the world will be over 65, up from 9% in 2019. While healthier than ever before, large aged populations mean more chronic diseases to treat. This is fuelling a rise in demand for healthcare, drugs and diagnostic services.



#### Emerging middle class

Half the world's population is now part of the middle class, according to Brookings. That's forecast to rise to almost two thirds by 2030. With money to spend on products and services demand for healthcare and related services will continue to grow.



#### Rising healthcare spend

Global healthcare spending fell in 2020 as non-urgent care was cancelled and people put off non-essential treatments. A sharp recovery will follow in 2021 as deferred treatments are resumed, with global spending forecast to rise by 5.5%, according to EIU. Longer term, healthcare spending is forecast to outpace the rate of GDP growth.



#### Personalised medicine

Sophisticated consumers are driving demand for greater control over their own care. This is fuelling the development of personalised medicine, enabled by advances in diagnostic testing, such as genotyping.

### Supply-side



#### Technology and discovery

AI, machine learning and data-driven health solutions are accelerating medical development as tech companies enter the sector. Alphabet subsidiary DeepMind's advances in understanding protein structures is set to transform drug discovery.



#### Venture capital funding

VC funding into life sciences has grown by 200% in the last five years, reaching highs of \$54 billion in 2020. This has opened the sector up to new entrants and supercharged growth.



#### The patent cliff

The expiration of patents and the drop in revenue that follows drives the need for a strong R&D cycle to support new drug discovery, while driving competition in the space.



#### Resilience and self-reliance

Supply chain disruption in the wake of Covid-19 led to a political push for the onshoring of medicines manufacturing. This will fuel national investment in strategic companies and production facilities.

🍷 Research, development, and innovation are often clustered around leading universities, science parks, and research institutes 🍷

# Top 20 Science Cities

The United States leads, but for how much longer?

The events of 2020 have thrown into sharp relief the importance of the life science industry worldwide. From researching new therapies, to genomic sequencing, to medical technology, the life sciences will only continue to grow its relevance to the economy. Research, development, and innovation are often clustered around leading universities, science parks, and research institutes.

We have ranked the top 20 cities for life sciences, based on their human capital, investment into health and R&D, the flow of funding into the cities, their openness for business, lifestyle indicators, and the cost of property in each market.

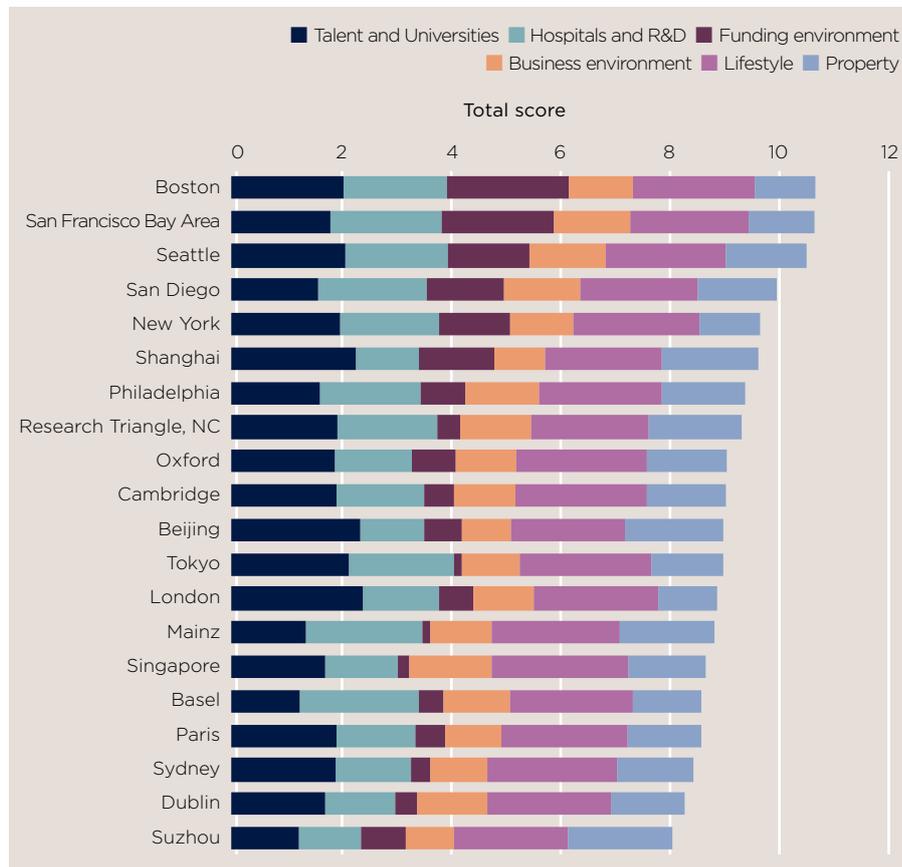
Cities in the United States claim the top five spots in the Science Cities rankings, led by Boston. A leader in VC funding and government investment into R&D, the United States continues to dominate the industry in life science research and innovation. Shanghai is the highest-ranking Chinese city and the top ranked non-US city in our analysis, a testament to the rise of China as a global leader in the sector.

European cities, from Oxford and Cambridge to Mainz to Dublin, perform well in the analysis especially given their comparatively smaller populations and lower levels of VC investment. Top universities, small but growing

investment into the life sciences industry, and lower salary costs for scientists compared to other Science Cities provide ample opportunities for future investment and growth in these markets.

For now, the United States is the dominant player in the industry, particularly in terms of size and funding volumes, but our analysis shows that competition for the top spot is growing among global contenders that offer strong talent pools, value for investment, and expanding life science industries.

## Savills Science Cities, top 20



**Boston**  
Education and research hub tops the list



**Shanghai**  
The top ranked non-US city in the index



**Singapore**  
The most business-friendly Science City



**Basel**  
12 pharmaceutical company HQs and a leader in the industry

**Note:** Talent and Universities, Hospitals and R&D, Funding environment, and Lifestyle received higher weightings than Business environment and Property categories

**Source:** Savills Research



Skilled scientists, technicians and researchers are the lifeblood of the life sciences sector

## What makes a Science City?

Just as a chemical reaction requires all components to be present in appropriate ratios, so too does a successful Science City. The top performing Science Cities in our analysis score well across all metrics

### Index components

| Category   | Description   | Top 3 ranked cities in category                                     |
|--|---|---|
| <b>Talent pool and universities</b><br> | Skilled scientists, technicians and researchers are the lifeblood of the life sciences sector. Cities with strong higher education sectors and higher levels of in-migration, either from abroad or in-country, mean a deeper pool of potential employees. We measure salaries, migration, the number, rankings, and student bodies of life science universities and the research coming out of them.       | <b>London</b><br><b>Beijing</b><br><b>Shanghai</b>                  |
| <b>Hospitals and R&amp;D</b><br>      | Strong healthcare infrastructure is critical to R&D in life sciences. We measure the number of hospitals, the number of hospital beds, and government spend on healthcare. Government investment into R&D shows how each country prioritises innovation and discovery in the life sciences field. We examine government spend on it, linkages between universities and industry, and the number of patents. | <b>Basel</b><br><b>Mainz</b><br><b>San Francisco Bay Area</b>       |
| <b>Funding environment</b><br>        | Investment into innovation and research coming from life science firms is critical for sector growth. Both VC and philanthropic grants for life science and global health factor in our analysis.   | <b>Boston</b><br><b>San Francisco Bay Area</b><br><b>Seattle</b>    |
| <b>Business environment</b><br>       | How hospitable government and regulation are to business and start-ups plays a role in where firms choose to locate. We examine ease of doing business, tech infrastructure, and information and communication technologies in each city.   | <b>Singapore</b><br><b>Seattle</b><br><b>San Francisco Bay Area</b> |
| <b>Lifestyle</b><br>                  | In a fiercely competitive global market for talent, city attractiveness matters. Here we assess the cost of living, quality of life, safety, mobility and environmental factors.  | <b>Singapore</b><br><b>Cambridge</b><br><b>Tokyo</b>                |
| <b>Property</b><br>                   | Costs of property, both commercial and residential, have an impact on the bottom lines of both companies and workers. Cities with lower property costs for lab space and residential perform well in this category.   | <b>Suzhou</b><br><b>Beijing</b><br><b>Shanghai</b>                  |

# Top 20 Science Cities in profile



## Boston Rank: 1

**Life science VC dollars per deal: \$53 million**

**Notable occupiers: Biogen, The Broad Institute**

Our top-ranked Science City, the Boston-Cambridge metro area is an education and research powerhouse. It is the location of MIT and Harvard, two of the top-ranking universities globally. Dollar per VC deal, Boston attracts more funding into the sector than anywhere else.



## San Francisco Bay Area Rank: 2

**Life sciences VC Investment 2020: \$9.4 billion**

**Notable occupiers: Gilead Sciences, Genentech**

The San Francisco Bay Area receives the highest VC by volume of all our Science Cities. A rich higher education environment and world-leading tech start-up scene offer a fertile crossover between life sciences, academia, and technological innovations.



## Seattle Rank: 3

**Number of global health grants from Bill and Melinda Gates Foundation since 2009: 453**

**Notable occupiers: Amgen, Johnson & Johnson**

R&D in engineering and life sciences is nearly 14 times more concentrated in Seattle than it is nationally. The city is the location of the Gates Foundation, the global leader in health philanthropy, which has awarded more global health grants to Seattle and its education and science centres than any other Science City.



## San Diego Rank: 4

**Average annual temperature: 17.8 C**

**Notable occupiers: Salk Institute, Pfizer**

San Diego's life science industry generates about \$41 billion in economic activity and accounts for 68,000 jobs. The city scores well in education metrics in the index and is second-ranked in dollars per VC deal.



## New York Rank: 5

**Number of students enrolled at QS top 350 science universities: 91,874**

**Notable occupiers: Johnson & Johnson, Merck**

New York benefits from a deep talent pool, high concentration of academic research centres, \$2bn in grants from the NIH annually, and six incubators to support nascent life science companies.



## Shanghai Rank: 6

**Average scientist salary: \$36,550**

**Notable occupiers: QIAGEN, HUYA Bioscience International, AstraZeneca**

Shanghai is the top-ranked Chinese city and is the highest ranked city outside of the United States. The city is one of the main domestic talent pools for the Chinese biotechnology industry.



## Philadelphia Rank: 7

**Average university rank in QS top 350: 15**

**Notable occupiers: Teva Pharmaceuticals, Almac Group**

Philadelphia has a concentration of talented scientists, deep-pocketed funders, and collaborative lab space to attract life science firms. The city benefits from nearly 27,000 students enrolled at top research universities and an average of \$31.5 million per VC deal in 2020.



## Research Triangle, North Carolina Rank: 8

**Average 2 bedroom apartment rent: \$1,810**

**Notable occupiers: PPD, Syneos Health, NIH**

Anchored by Raleigh, Durham, and Chapel Hill, the Research Triangle derives its name from the calibre of research coming out of the universities and research park. Almost 600 life science companies operate in the region contributing almost \$10 billion to the regional economy.



## Oxford Rank: 9

**Average university rank in QS top 350: 2**

**Notable occupiers: Vaccines Manufacturing and Innovation Centre (VMIC), Oxford Nanopore, Oxford BioMedica, Agilent Technologies**

With world-leading research providing the ideas and talent to develop ground-breaking new technologies, Oxford also operates as a global powerhouse for clinical trials. The city received the highest VC funding for the UK in 2020 at \$611 million, and averaged over \$26 million per deal.



## Cambridge Rank: 10

**VC investment into life sciences: \$318.9 million**

**Notable occupiers: AstraZeneca, Amgen, Illumina**

A centre of health research in the UK, Cambridge is a vital hub within the UK life sciences industry. Cambridge was cited in nearly 1,600 articles throughout 2019 and has received over 150 grants from the Gates Foundation for global health research initiatives in the last decade.



**2019 life science research article citations: 6,018**

**Notable occupiers: Sino Biopharmaceutical, Bayer**

Beijing is the regulatory hub and has a talented domestic talent pool. The Chinese government is placing emphasis on and investment into biotech and pharmaceutical innovation through its 'Made in China 2025' strategy.



**Number of international schools: 43**

**Notable occupiers: Riken, IQVIA, Astellas**

Japan's new National Strategic Special Zones, regions that offer eased regulations and tax benefits including Tokyo, are encouraging the creation of innovative drugs and medical devices. Tokyo benefits from competitive salaries, three globally ranked universities, and a ratio of two patents per 1,000 people, the highest of any of the Science Cities.



**Number of universities in QS top 350 Science**

**Universities: 6**

**Notable occupiers: Francis Crick Institute, Biogen, IQVIA, Novartis, Wellcome Trust**

London has a unique ecosystem combining a rich network of world-class universities, renowned research centres, healthcare providers, medical charities, innovative small businesses and global industry players. London is also the location of six of the top-ranked universities for science.



**Cost of living index: 67, lowest of our European Science Cities**

**Notable occupiers: BioNTech, AbbVie, Merck**

Home to the headquarters of BioNTech, a leading vaccine developer, as well as the University of Mainz. The compact, walkable city offers residents a high quality of life with low crime rates, low pollution and a low cost of living.



**Ease of doing business rank: 1st**

**Notable occupiers: Johnson & Johnson, Thermo Fisher Scientific**

Singapore's business-friendly environment, deep base of skilled talent, manufacturing capabilities and thriving research ecosystem have drawn pharma and biotech firms to connect with the growing Asian market.



**Average scientist salary: \$100,530**

**Notable occupiers: Novartis, Roche, Bayer**

One of the leading centres in the large Swiss pharmaceutical industry with 12 global company headquarters, Basel has a strong talent pool and attracts companies that conduct research and development in industries that include pharmaceuticals, biotechnology, and other life sciences.



**Number of international schools: 38**

**Notable occupiers: Sanofi, Servier**

The Paris region features a high concentration of world-famous academic research institutions in all scientific fields, including healthcare research. It accounts for more than 40% of French academic research.



**Average annual temperature: 17.7 C**

**Notable occupiers: ResMed, Roche**

World-leading education and research institutions underpin the city's vibrant biotech industry. New South Wales is home to 30% of Australia's biotech companies, and most of these are located in Sydney.



**Air Quality: 32 PM25, the 5th best of our cities**

**Notable occupiers: Pfizer, Novartis, Johnson & Johnson**

Dublin boasts two top-ranked universities, a high lifestyle score, and a hospitable business environment. Dublin and Ireland offer a deep pool of talent, strong international reputation, and a track record of investment in R&D.



**Average 2 bedroom apartment rent per month: \$386**

**Notable occupiers: HUYA Bioscience International, Novartis, GlaxoSmithKline**

A biomedicine and nanotechnology cluster, Suzhou Biobay has been formed in Suzhou Industrial Park. The city also received over \$820 million in VC investment in 2020, further boosting the life sciences industry there.



# Talent and Universities

US and UK universities lead globally. Talent-rich cities outside the US offer value to life science occupiers

Science City: Basel

## The university link

Life sciences is a knowledge intensive industry. For life sciences firms, the linkage between universities and industries is a critical source of new talent and new ideas. For this reason, universities, and their prowess in the life sciences field are a key component of the Science Cities index.

Proximity to top universities and research hospitals has a significant influence on where life science firms choose to locate. Others are spun out of academia itself. The prestige and rigour of these universities are also critical factors as firms will look to hire the best and the brightest to join their teams.

The leading universities in life sciences are concentrated in the US and UK. Of the top 20 highest ranked universities for science, 14 of them are found in our Science Cities. The first ranked is Harvard. Located in Cambridge, Greater Boston, it is well known for supplying top scientists and doctors in the US and worldwide. Second and third in the global rankings are the universities of Oxford and Cambridge in the UK. Big global cities offer the advantages of multiple high ranked institutions: London is home to six of the top-ranked globally for science, with 125,400 students combined, representing a huge prospective pool of talent. Tokyo, another major city, has three top-ranked universities for science with nearly 64,000 students between them.

## Scientist Salaries vs Savills Science Cities Rank

| Location               | Country     | Scientist Salary | Savills Science Cities rank | Premium or discount to all-city scientist salary (\$62,587) |
|------------------------|-------------|------------------|-----------------------------|---|
| Basel                  | Switzerland | \$112,540        | 14                          | 80%   |
| San Francisco Bay Area | US          | \$94,170         | 2                           | 50%   |
| Boston                 | US          | \$83,830         | 1                           | 34%   |
| Mainz                  | Germany     | \$80,410         | 12                          | 28%   |
| San Diego              | US          | \$78,340         | 4                           | 25%   |
| New York               | US          | \$70,770         | 5                           | 13%   |
| Seattle                | US          | \$70,590         | 3                           | 13%   |
| Sydney                 | Australia   | \$69,680         | 18                          | 11%   |
| Philadelphia           | US          | \$68,570         | 6                           | 10%   |
| Research Triangle, NC  | US          | \$63,610         | 8                           | 2%  |
| Paris                  | France      | \$60,680         | 16                          | -3%   |
| Singapore              | Singapore   | \$52,780         | 17                          | -16%  |
| Tokyo                  | Japan       | \$48,970         | 11                          | -22%  |
| Dublin                 | Ireland     | \$47,570         | 19                          | -24%  |
| London                 | UK          | \$46,680         | 13                          | -25%  |
| Cambridge              | UK          | \$45,440         | 9                           | -27%  |
| Oxford                 | UK          | \$44,420         | 10                          | -29%  |
| Shanghai               | China       | \$36,550         | 7                           | -42%  |
| Suzhou                 | China       | \$36,550         | 20                          | -42%  |
| Beijing                | China       | \$34,830         | 15                          | -44%  |

Source Savills Research using Glassdoor



Attracting top talent is a major driver for life science firms worldwide

A university’s research output is illustrative of the innovation happening in the Science Cities, and a proxy of collaboration at the institutional, national and regional level. In 2019, Beijing led the world in the number of life science articles published, counting over 6,000 article citations. New York City, Boston, San Francisco, and Shanghai round out the top five cities by article citations. Combined, the Chinese cities included in our rankings published nearly 10,000 life science article citations over the course of 2019, demonstrating the growing international recognition of the Chinese life sciences environment.

**Cost of talent for employers**

The cost of employing a highly skilled

workforce in the life sciences industry requires a delicate balancing act. Workers will likely choose locations where they will receive the highest return on the investment into their educations and skills – a higher salary, especially relative to living costs. To that end, firms will be looking to minimise their labour costs while still attracting top talent.

While Basel posts the highest salary for scientists of the 20 Savills Science Cities, of the top 10 most expensive workforce locations, seven are located in the United States. Conversely, the least expensive locations to hire workers are in the UK and China. A scientist’s salary in Cambridge UK is 46% lower than the same role in Cambridge (Boston) in the US, and 27% lower than the all-city average.

The discount is even greater in the case of Oxford. This demonstrates the comparative value for UK markets for a similarly skilled workforce.

Only in China are staff cheaper among the cities we studied here. The gap is closing, however, as the sector develops and big players expand globally, intensifying the competition for talent.

“ Proximity to top universities and research hospitals has a significant influence on where life science firms choose to locate ”

**Scientist Salaries vs Savills Science Cities Rank**



Source Savills Research using Glassdoor



Bespoke property needs for life sciences firms offer opportunities and obstacles for developers in Science Cities

# Science Cities property

Industry growth is outstripping supply of labs in some markets, while high residential costs are an obstacle to staff

Life sciences firms often have wide ranging and bespoke property requirements. These needs can include more data heavy computational equipment in ‘dry’ labs through to fume hoods, sinks, and chemical resistant surfaces for ‘wet’ labs.

The specialist nature of these spaces means that demand is outstripping supply in some markets, with high development and fit-out costs a barrier to some entrants. The sector is also highly resilient to changes in working habits, as life sciences research can’t be carried out from home.

The costs of leasing these facilities vary widely by city. Boston’s lab rents, at \$103 per sq ft, are at a 50% premium over offices in the city. With a mix of growing startups and large, expanding companies, Boston has high occupier demand and lab space vacancies are low. In this market, given its premium on office space, converting disused office spaces to lab space makes economic sense.

Contrasted with the second ranked San Francisco Bay Area, with the recent weakness in its office leasing markets and larger land area, lab spaces can be found in the region for an 11% discount compared to office costs.

London has invested a great deal in its lab facilities and the 2020 announcement of GSK’s new research base in Kings Cross is the most recent firm to take advantage of that investment. However, a shortage of space in the city means that costs for both lab space and office space are the highest in our analysis at \$113 per sq ft (albeit broadly comparable in cost to prime office space). In San Diego is another space-constrained city, lab rents average \$42 per sq ft, and developers are increasingly converting obsolete office and industrial buildings into lab space to meet demand.

Some of the least expensive lab rents can be found in China, with facilities in Beijing and Suzhou offered at a 60% discount compared to offices in the city, with many facilities located in suburban industrial parks. In the United States, the Research Triangle in North Carolina with its ample

space and sprawling suburban parks has the least expensive rents, quoted at an average of nearly \$22 per square foot.

Lab space can be housed in a range of property types, from city centre buildings to out of town industrial parks. Repurposing existing buildings, including retail, also offers opportunity, particularly as generous floor to ceiling heights can accommodate necessary ventilation plant (though high fit-out costs means that, depending on the building, retrofitting isn’t always cost effective).

Lab space in warehouses faces competition for sites from a logistics sector fuelled by rising e-commerce penetration across the globe. Such sites are critical to life science manufacturing, particularly as vaccine production is ramped up across in response to Covid-19. Supply chain disruption in the wake of the first wave of

the pandemic led to calls to onshore the production of more medicines. Competition for suitable sites may be a limiting factor to achieving this at scale.

Location matters too. Life sciences organisations want to be close to the major research universities and institutes to capitalise on the innovation, talent and startups coming from these institutions. As any occupier, employee wellbeing is high on the agenda and the best buildings offer amenity space and provision for sustainable modes of transportation, such as proximity to public transport and cycle storage.

Requirements aren’t limited to lab space. From startup incubators and R&D facilities to major headquarters, the sector brings a diverse range of requirements. For investors, this can help to diversify portfolios.

## Science Cities lab and office rents

| City                   | Country   | Lab space rents (\$ sqft) | Prime office rents (\$ sqft) | Difference to prime office rents |
|------------------------|-----------|---------------------------|------------------------------|----------------------------------|
| London                 | UK        | \$113                     | \$115                        | -1.7%                            |
| New York               | US        | \$105                     | \$90                         | 16.7%                            |
| Boston                 | US        | \$103                     | \$68                         | 51.5%                            |
| San Francisco Bay Area | US        | \$68                      | \$76                         | -10.5%                           |
| Sydney                 | Australia | \$65                      | \$67                         | -3.0%                            |
| Cambridge              | UK        | \$64                      | \$75                         | -14.7%                           |
| Oxford                 | UK        | \$61                      | \$75                         | -18.7%                           |
| Tokyo                  | Japan     | \$56                      | \$118                        | -52.9%                           |
| San Diego              | US        | \$42                      | \$42                         | 0.0%                             |
| Singapore              | Singapore | \$41                      | \$86                         | -52.7%                           |
| Seattle                | US        | \$40                      | \$46                         | -13.0%                           |
| Philadelphia           | US        | \$39                      | \$34                         | 14.7%                            |
| Shanghai               | China     | \$22                      | \$60                         | -63.3%                           |
| Research Triangle, NC  | US        | \$22                      | \$31                         | -29.0%                           |
| Beijing                | China     | \$17                      | \$42                         | -59.5%                           |
| Suzhou                 | China     | \$6                       | \$16                         | -62.5%                           |

Source Savills Research



**Living space**

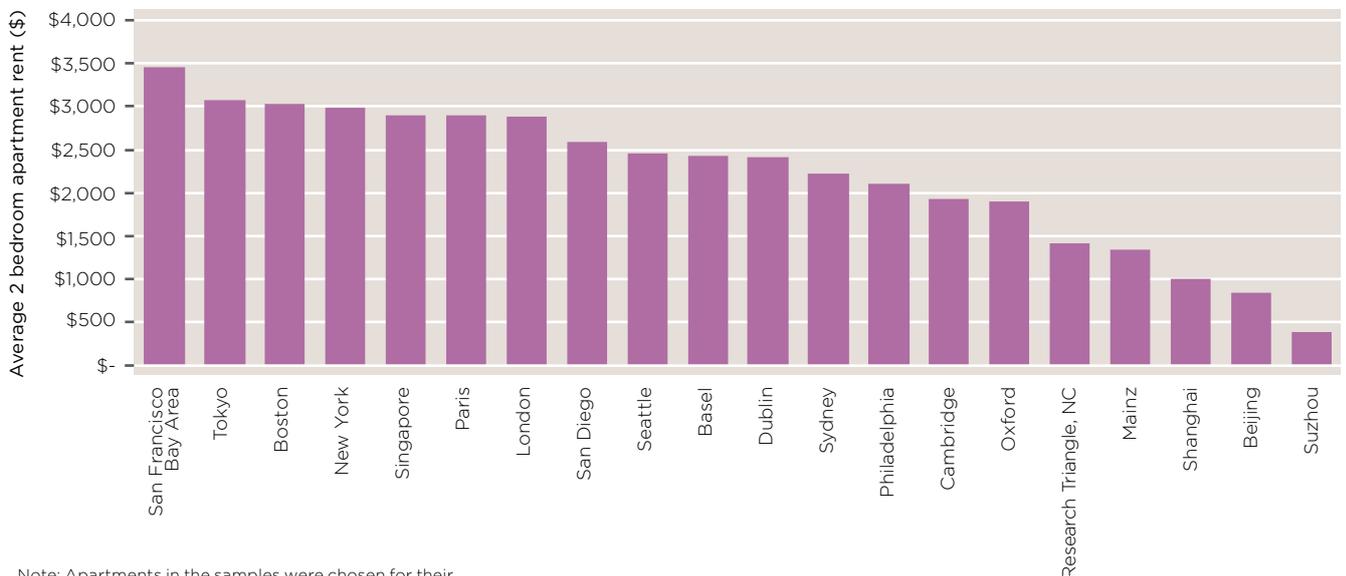
Residential rental costs matter because affordability can be a deciding factor in where young employees decide to settle. All of our cities are successful and growing with competitive life science jobs markets and in turn facing affordability challenges.

Two bedroom apartments located close to major research facilities have widely varying costs. Large cities with constrained supplies of living space such as San Francisco, Tokyo, and New York possess the highest apartment rental costs, averaging over \$3,000 for a two bedroom

apartment close to the academic and research hubs.

By contrast, cities with more available space but still offering comparatively high salaries, such as the Research Triangle, NC or Mainz, have apartment rents averaging closer to \$1,350.

**Average price of two bedroom apartments near top universities or research centres in Science Cities**



Note: Apartments in the samples were chosen for their proximity to universities or research centres in Science Cities.

Source Savills Research using local listings databases



Venture capital and philanthropic grants are enabling growth and discovery in the industry

## Funding into Science Cities

Attention into the sector is growing quickly but funding has been growing faster

The life sciences industry receives its funding from myriad different sources from government grants to philanthropic initiatives to private equity to VC. Flows of capital, particularly VC, are a good indicator of the places that matter for to the sector.

Global VC investment into life sciences topped \$54 billion in 2020, an increase of 69% over 2019 volumes. This has outpaced total VC investment growth, which rose by 14% in 2020 to \$335 billion.

In the past five years, VC investment into life sciences has grown by 200% (see chart below). This influx of funding into life sciences has been used to develop new technologies and therapies which will be used to help tackle the problems facing humanity today and in the future.

Industries receiving the lion's share of investment over the past five years are biotechnology, drug discovery, and pharmaceuticals. Investments into these sectors are driving innovation in the life sciences industries.

VC is a good lead indicator of where investment into people and property is likely to follow. In 2020, VC investment into life sciences in the 20 Savills Science Cities accounted for 60.3% of total VC investment into the sector globally.

The San Francisco Bay Area leads the pack in VC investment volume with \$9.4 billion invested in 2020, both because of the volume of innovation in the area and because it is the largest geographic area covered in the analysis (although this is dwarfed by the \$35 billion invested into tech the same year, for which the area is best known). Boston and Shanghai complete the top three with \$7.8 billion and \$4.2 billion VC investment into life sciences in 2020.

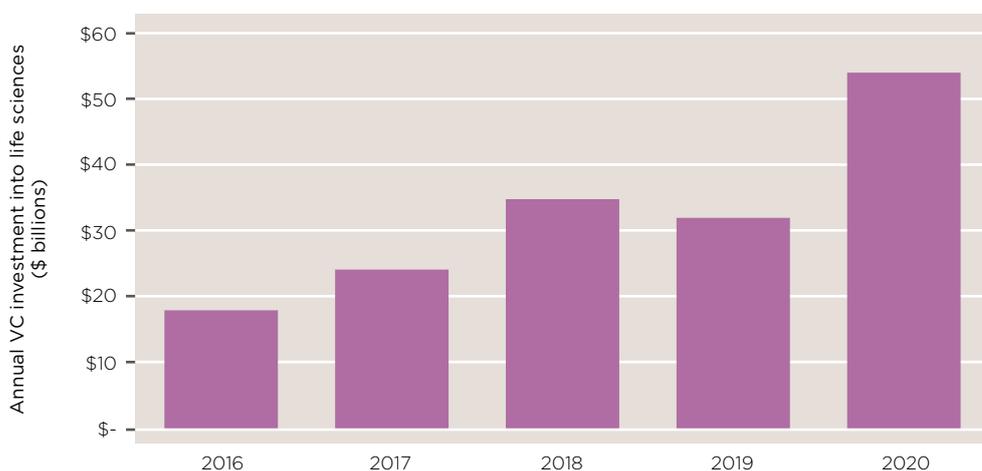
While the Bay Area leads in VC investment volumes, Boston comes first in the amount of VC per deal with an average of \$53 million per deal. Deals of this magnitude demonstrate investor confidence in the Boston life sciences industry and the innovation it produces.

Philanthropy also plays a large role in research and development of therapies, especially for underserved populations and geographic regions. Leading global health philanthropy is the Bill and Melinda Gates Foundation, which gave \$1.475 billion in 2019 in grants for global health initiatives, more than the WHO budget for universal healthcare programmes in 2021. In 2019, global health grants accounted for 29% of the Foundation's spending, a percentage likely to have increased in 2020.

Combined, our Science Cities received 2,408 grants from the Gates Foundation in the last 10 years. Seattle, home of the foundation, received the most grants for health programmes with 453, followed by New York, and London with 426 and 316 respectively.

The combination of VC, philanthropy, and other funding into Science Cities will continue to drive innovation and the search for solutions to global health problems.

Global VC Investment into life sciences



Source Savills Research using PitchBook



**Seattle**  
Location of the Gates Foundation and top for foundation grants received



**Shanghai**  
City with highest VC investment outside the US



Science city: Singapore

# Lifestyles of Science Cities

In a fiercely competitive global market for talent, city attractiveness matters

It is not just costs that are the driving factors for where top scientists choose to live and work. Lifestyle plays a large role in the appeal of any city, and the talent working for the top research institutions will undoubtedly consider lifestyle factors in any relocation decision.

For scientists, researchers, and technicians ‘green commutes’ to work

such as walking and cycling, the cost of living, low crime, good air quality, among other factors, all matter. Strength in these factors are not limited to smaller cities in our analysis, though it does give them an edge.

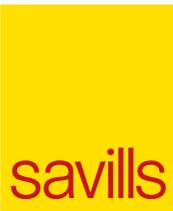
Cities that score well in the lifestyle category tick all the boxes and offer good walk and cycle scores, clean air, low crime, high numbers of

international schools, and a low cost of living. Scoring highest in the lifestyle category, Singapore offers the highest number of international schools, low crime rates, and good air quality.

Though Tokyo is one of the largest cities in the world, it scores well on education, air quality, and crime statistics. Sydney, with its laid-back reputation, also scores well on our lifestyle indicators.

## Top five Science Cities by Lifestyle Category score

|   |   |
|---|---|
|  <p><b>1</b> Singapore</p> | <p>This Asian business hub offers families some 60 international schools. Low crime, year-round warm weather and a layering of green space throughout the city makes it an inviting place to live and work.</p> |
|  <p><b>2</b> Cambridge</p> | <p>A city known for its cycling culture, natural beauty, and educational reputation, Cambridge also offers the lowest cost of living for all the British Science Cities.</p>                                    |
|  <p><b>3</b> Tokyo</p>     | <p>The Japanese capital offers good air quality, low crime, and the second highest number of international schools of our cities, making life attractive for expats and locals alike.</p>                       |
|  <p><b>4</b> Oxford</p>    | <p>Another British city with a top educational reputation, the compact nature of the city makes it ideal for walking and cycling, and it offers easy access to the countryside on its doorstep.</p>             |
|  <p><b>5</b> Sydney</p>    | <p>With its pleasant climate, good air quality, access to beaches, and moderate cost of living (relative to salaries), Sydney is an appealing city for any science worker.</p>                                  |



## Savills Research

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