

# SIP West Midlands: Life Sciences Skills Report



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# Greater Birmingham and Solihull Local Enterprise Partnership Foreword

Life Sciences, and in particular Health and Medical Technologies, play an instrumental role in the economy of the West Midlands. With over 400 business across the combined authority area, employing 11,000 people and generating over £4 billion of GVA<sup>1</sup>, I cannot underestimate the value of this critical sector. Health innovation has been brought into sharp focus throughout the pandemic, however it has also exposed the skills gaps we all need to address.

At Greater Birmingham and Solihull Local Enterprise Partnership (GBSLEP) we view the whole Life Sciences, and in particular data driven Health and Medical Technologies, as a high growth area. We are working with our partners in the NHS, businesses, local authorities, and academic institutions to elevate the fantastic, life-changing work that is being carried out right across Greater Birmingham and Solihull, the Black Country and Coventry & Warwickshire.

The West Midlands already has a track record for healthcare innovation and is home to centres of national and international significance, including one of the largest national Cancer Research UK Trials Units, one of eight national Health Data Research UK sites, one of five Midlands & Wales Advanced Therapy Treatment Centres, the West Midlands Genomic Medicine Centre and the Aston Brain Centre.

At GBSLEP we are making significant investments in Life Sciences, including the financing of the Precision Health Technology Accelerator (PHTA) located on the Birmingham Health Innovation Campus. Critical to the success of these assets will be a future workforce that has the right skills to meet the needs of employers.

GBSLEP has an ambitious skills agenda with a commitment to upskill thousands of people each year at Level NVQ3 (A-Level). We have a newly formed Skills and Apprenticeship Hub connecting businesses and individuals with training providers so skills needs are matched. This is just one way in which we are creating the conditions to drive inclusive economic growth across the region. Our support for the formation of SIP West Midlands will play an integral part in achieving our goals.

I believe businesses in Health and Medical Technologies can help accelerate recovery and will be drivers for sustainable and inclusive economic growth. As a LEP we will continue to listen to our businesses and help them to become world leaders in innovation and creativity by creating a pipeline of talent. I therefore welcome this report from SIP West Midlands and urge all of us to come together to find solutions to the skills gap.

**Tim Pile**  
Chair of Greater Birmingham  
and Solihull Local Enterprise  
Partnership



1. [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/802091/west-midlands-local-industrial-strategy-single-page.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/802091/west-midlands-local-industrial-strategy-single-page.pdf)

## Science Industry Partnership Foreword

The Science Industry Partnership (SIP) recognises the unique strength and ability of our sector to unlock opportunities, boost productivity, and lead the charge for economic growth in every region of the UK.

Over the last year, employers in our sector have risen to the challenges brought about by the global pandemic, demonstrating the ability to provide solutions to the world's biggest problems, whilst having a profoundly positive impact on the health and wellbeing of our society.

The West Midlands, with its high growth potential of the Health and Medical Technology sector and a rich heritage of innovation, is intrinsic to our growth and prosperity, making it crucial that employers in the region have access to the workplace talent needed now and in the future.

Employment forecasts suggest up to 10,000 jobs will be required within the region by 2030, with many of those roles bringing with them the need for a range of new skills, as employers continue to lead the way with emerging and innovative technologies.

This anticipated and much welcomed growth will no doubt require some practical and consolidated employer support as we enhance and extend our attraction activity to compete for the very best talent available.

The task of ensuring we upskill our existing workforce whilst continuing to nurture the next generation of STEM talent, will also require a dedicated employer focus and close stakeholder collaboration from a range of partners.

And with that in mind, I'm pleased to welcome the introduction of SIP West Midlands, which in partnership with GBSLEP will work to ensure the potential for the region is met.

Finally, I hope the insight in this report covering skills and workforce trends can act as a useful evidence base and stimulate further debate and action around specific skills priorities to the region.

**Dr Malcolm Skingle,**  
Chair of Science Industry  
Partnership & Director Academic  
Liaison at GlaxoSmithKline



## Introduction to SIP West Midlands

The Science Industry Partnership (SIP) is a powerful employer-led membership alliance of companies from across the science industries. It works collaboratively with government at a national level to establish the vocational skills needed to build a high value, productive and highly skilled UK scientific workforce.

SIP West Midlands will be the latest addition to the SIP local network after great success in the North East, Liverpool and Cambridge. In partnership with Greater Birmingham and Solihull Local Enterprise Partnership (GBSLEP), the employer-led group will drive a collaborative approach to skills.

SIP West Midlands will develop a programme of work in the region to deliver impact and results by bringing innovative approaches to learning, engaging new companies, increasing apprenticeship take-up, facilitating local skills networks and opening up new collaborations for STEM and careers outreach.

Our employers will work together to enable public investment to be directed into skills programmes that will make a difference locally. It will connect up to the other SIP Local Groups and benefit from sharing best practice and SIP activities across the national network.

Officially launched on 22nd April 2021, SIP West Midlands is a fantastic opportunity for employers in the region to come together and get involved in an industry-led group. The group will lead in the development of a forward looking skills agenda, and deliver growth in the take up of vocational skills in the West Midlands.

### Life Sciences in the West Midlands: Key findings

- 17,320 employees
- Up to 9,937 new and replacement jobs by 2030
- Pharmaceutical employment grew by 44% between 2015-2019
- Over 600 companies with growing numbers of SMEs
- Regional turnover of £6.49bn
- Value added per employee in the sector is significantly higher than regional average
- Over 11,000 STEM apprenticeship starts in 2019-20



# Methodology and Assumptions

This report focusses on the Life Sciences workforce in the **Greater Birmingham and Solihull Local Enterprise Partnership (LEP), Black Country LEP, Coventry & Warwickshire LEP areas.**

Where statistics refer to the West Midlands region, they relate to the widely accepted government definition of the nine regions of England.<sup>2</sup> The West Midlands region includes, but is not limited to: The Black Country; Herefordshire; Shropshire; Staffordshire; Warwickshire; West Midlands (county); Worcestershire.

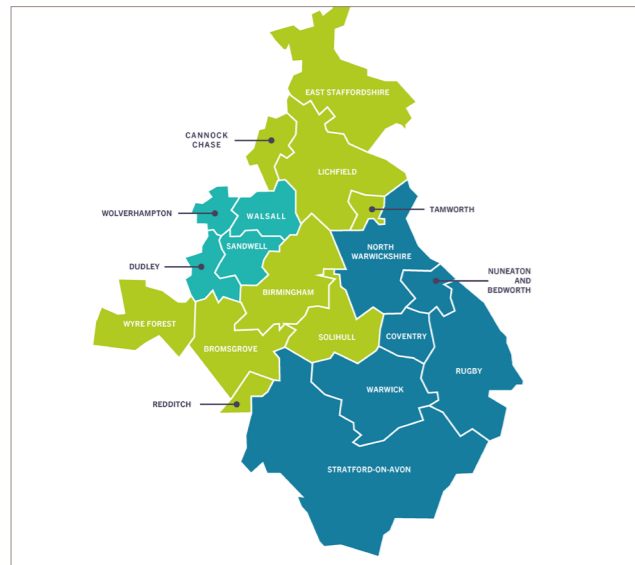


Figure 1: Geographical coverage of GBSLEP, Black Country LEP, and Coventry & Warwickshire LEP

Figure 2: Map showing the 9 regions of England

## Data Sources

### Office for National Statistics

Office for National Statistics (ONS) datasets allow for workforce analysis using both Standard Industrial Classification (SIC) and Standard Occupational Classification (SOC) codes.

The Life Sciences sector footprint consists of six SIC codes, covering the three sub-sectors:

|                        |   |
|------------------------|---|
| Pharmaceuticals        | 21.10 Manufacture of basic pharmaceutical products                                    |
|                        | 21.20 Manufacture of pharmaceutical preparations                                      |
| Medical Technology     | 26.60 Manufacture of irradiation, electromedical and electrotherapeutic equipment     |
|                        | 32.50 Manufacture of medical and dental instruments and supplies                      |
| Research & Development | 72.11 Research and experimental development on biotechnology                          |
|                        | 72.19 Other research and experimental development on natural sciences and engineering |

Due to issues around the availability and reliability of local data, a number of national data sources from ONS have been used to support this report, specifically: the Labour Force Survey (LFS); the Annual Population Survey (APS); the Annual Survey of Hours and Earnings (ASHE).

The above national datasets are based on survey responses. For example, the LFS is made up of approximately 40,000 responding UK households and 100,000 individuals per quarter. As a result, the data can become unreliable when it is split to look at granular elements of the workforce. In order to combat this, an average of all four quarters for the latest full year of data (2019) has been taken. Despite this, the number of survey responses that are specific to the West Midlands Life Sciences sector is too small to be considered meaningful. Consequently, the ONS statistics referenced in this report relate to the wider United Kingdom. They should be considered as indicative of the patterns felt within the wider UK Life Sciences sector and not necessarily exact for the West Midlands. In this regard, an assumption has been made that what is true in the national picture, will be broadly true on a local level.

2. ONS: England - Detailed information on the administrative structure within England <https://www.ons.gov.uk/methodology/geography/ukgeographies/administrativegeography/england>

### Office for Life Sciences

Life Sciences sector specific data from the Office for Life Sciences (OLS) was obtained from the “Bioscience & Health Technology Sector Statistics 2019” report.<sup>3</sup> 2019 is the latest iteration of their annual dataset covering the UK bioscience & health technology sector. OLS have built a comprehensive repository of UK Life Sciences sector data, using multiple sources to cleanse and refine the dataset, ensuring a high level of accuracy. Unfortunately, the OLS dataset does not allow for analysis into important workforce characteristics, such as: employee demographics; qualification level; and occupational breakdown. As a result, a combination of both OLS and ONS data has been used throughout this report to give a more thorough understanding of the workforce.

Where OLS data has been used for employment, turnover, and business statistics, the Research & Development functions of the sector are included in the figures for Pharmaceuticals and Medical Technology. The data for both sub-sectors consist of:

- “Core” activity such as the discovery, development and marketing of therapeutics, and medical devices respectively.
- “Service & Supply” functions such as the supply of materials and equipment, and specialist services.

### Employment Forecasts

Employment forecasts have been generated using a bespoke modelling tool that was developed for the SIP Life Sciences 2030 Skills Strategy.<sup>4</sup> The forecasts show labour projections that consider both sector growth and retirements from the current workforce. The model was designed to provide indicative forecasting of the UK Life Sciences workforce, based on calculated growth coefficients and assumed retirement rates. It was not designed to be an exhaustive projection tool and does not consider any disruptive elements or anticipated changes in the composition of the workforce. The model was originally designed as a national projection tool, and therefore assumes that changes in regional employment within the West Midlands will match UK projections. Growth rates were calculated based on historical averages and assume a “high growth” scenario. Consequently, the forecasts project a rise in both Pharmaceuticals and Medical Technology employment within the West Midlands region.

### Higher Education Statistics Agency

Higher Education Statistics Agency (HESA) is the recognised source of data on Higher Education (HE) in the UK, and the designated data body for England. They collect, analyse, and disseminate accurate and comprehensive statistical information on all aspects of UK higher education. HESA data referenced in this report is taken from the following datasets:

- Students in Higher Education Providers 2016/17
- Destinations of Leavers from Higher Education (DLHE) 2016/17

DLHE shows the destination of graduates from higher education programmes six months after qualifying from their course.

### Apprenticeship Data

The apprenticeship data in this report is taken from the Education and Skills Funding Agency (ESFA). ESFA is an executive agency of the UK government, sponsored by the Department for Education. The data is for the full academic year 2019/20, running from August 2019 to July 2020. It allows comparison of both starts and achievements, across all standards and levels in different regions and combined authority areas.



3. Office for Life Sciences: Bioscience and health technology sector statistics 2019  
4. SIP Life Sciences Skills Strategy 2030

# Findings: Workforce Statistics

## Employment Trends

Overall, Life Sciences employment in the West Midlands region has remained fairly consistent between 2015 and 2019, with a slight increase of around 4% being observed. For comparison, Life Sciences employment for the entire United Kingdom grew by more than 15% over the same time period. As a result, the West Midlands region has seen a decrease in its percentage share of UK Life Sciences employment over the past five years, as shown in Table 1.

The composition of Life Sciences employment within the West Midlands region is changing. Total Pharmaceuticals employment in the region grew by nearly 44% in the five years between 2015 and 2019, from 4,310 to 6,200. The majority of this increase was due to a significant rise in employment within “Core” activity, which grew from 550 to 2,030, an increase of 269%. Pharmaceuticals “Service & Supply” employment within the region also grew by nearly 11%, from 3,760 to 4,170.

Total employment within the Medical Technology sector within the West Midlands region dropped by nearly 10% over the same period, from 12,373 to 11,120. Employment within “Core” activity fell by nearly 11% from 10,819 to 9,640, whereas “Service & Supply” employment fell by approximately 5% from 1,554 to 1,480. Despite this recent fall, only the South East, Yorkshire and The Humber, and the East of England have more people employed in the “Core” Medical Technology sector than the West Midlands region. The West Midlands region therefore remains a crucial part of one of the UKs fastest growing sectors.

OLS concluded that the fall in West Midlands Medical Technology employment was due to a combination of factors, including the movement of businesses to other UK regions, and the acquisition of businesses by overseas owners leading to restructuring. Unfortunately, the dataset does not split into LEP area or provide any indication of the size of businesses that have moved out of the region.

Table 1: Life Sciences employment data showing West Midlands region compared to United Kingdom total<sup>7</sup>

| Year | West Midlands region |               |                    |               |                     |               | United Kingdom Total |                    |                     |
|------|----------------------|---------------|--------------------|---------------|---------------------|---------------|----------------------|--------------------|---------------------|
|      | Pharmaceuticals      |               | Medical Technology |               | Total Life Sciences |               | Pharmaceuticals      | Medical Technology | Total Life Sciences |
|      | Employees            | % of UK Total | Employees          | % of UK Total | Employees           | % of UK Total | Employees            | Employees          | Employees           |
| 2015 | 4,310                | 4.0%          | 12,373             | 10.8%         | 16,683              | 7.5%          | 107,433              | 114,470            | 221,903             |
| 2016 | 4,538                | 4.0%          | 12,949             | 10.8%         | 17,487              | 7.5%          | 113,380              | 120,021            | 233,401             |
| 2017 | 4,251                | 3.6%          | 11,717             | 9.6%          | 15,968              | 6.6%          | 119,013              | 121,856            | 240,869             |
| 2018 | 5,521                | 4.6%          | 11,626             | 9.1%          | 17,147              | 6.9%          | 120,944              | 127,401            | 248,345             |
| 2019 | 6,200                | 5.0%          | 11,120             | 8.4%          | 17,320              | 6.8%          | 124,300              | 131,780            | 256,080             |

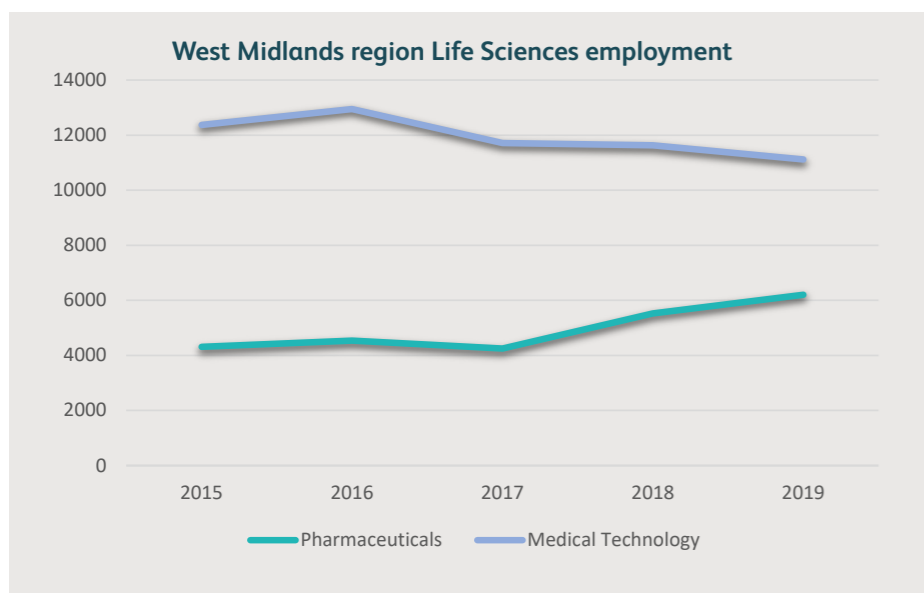


Figure 3: Life Sciences employment trends in West Midlands region split by sub-sector

5,6&7. Office for Life Sciences: Bioscience and health technology sector statistics 2019

Table 2: Regional Life Sciences employment as a percentage share compared to United Kingdom total

| Region                   | United Kingdom Life Sciences employment share by region |             |              |                    |             |              |                     |             |              |
|--------------------------|---|-------------|--------------|--------------------|-------------|--------------|---------------------|-------------|--------------|
|                          | Pharmaceuticals   |             |              | Medical Technology |             |              | Life Sciences Total |             |              |
|                          | 2015  | 2019        | % Change     | 2015               | 2019        | % Change     | 2015                | 2019        | % Change     |
| East Midlands            | 4.1%  | 3.0%        | -1.2%        | 8.2%               | 8.8%        | 0.5%         | 6.3%                | 6.0%        | -0.3%        |
| East of England          | 18.8%   | 20.2%       | 1.3%         | 11.8%              | 9.8%        | -2.0%        | 15.2%               | 14.8%       | -0.4%        |
| London                   | 12.8%   | 12.8%       | 0.0%         | 6.0%               | 7.6%        | 1.6%         | 9.3%                | 10.1%       | 0.8%         |
| North East               | 3.5%  | 3.4%        | -0.1%        | 2.2%               | 2.6%        | 0.5%         | 2.8%                | 3.0%        | 0.2%         |
| North West               | 12.5%   | 10.5%       | -2.0%        | 10.7%              | 10.7%       | 0.1%         | 11.6%               | 10.6%       | -0.9%        |
| South East               | 24.5%   | 25.5%       | 1.0%         | 20.3%              | 22.7%       | 2.4%         | 22.3%               | 24.1%       | 1.7%         |
| South West               | 2.9%  | 3.3%        | 0.4%         | 4.7%               | 6.5%        | 1.8%         | 3.9%                | 5.0%        | 1.1%         |
| <b>West Midlands</b>     | <b>4.0%</b>   | <b>5.0%</b> | <b>1.00%</b> | <b>10.8%</b>       | <b>8.4%</b> | <b>-2.4%</b> | <b>7.5%</b>         | <b>6.8%</b> | <b>-0.8%</b> |
| Yorkshire and The Humber | 3.9%  | 4.1%        | 0.2%         | 10.3%              | 9.6%        | -0.7%        | 7.2%                | 6.9%        | -0.2%        |
| Northern Ireland         | 3.7%  | 2.4%        | -1.3%        | 1.7%               | 1.9%        | 0.2%         | 2.7%                | 2.2%        | -0.5%        |
| Scotland                 | 5.4%  | 6.2%        | 0.8%         | 6.5%               | 5.5%        | -1.0%        | 6.0%                | 5.8%        | -0.1%        |
| Wales                    | 3.7%  | 3.5%        | -0.3%        | 6.7%               | 5.8%        | -0.9%        | 5.3%                | 4.7%        | -0.6%        |

Table 2 shows a breakdown of Life Sciences employment as a percentage share for all regions across the United Kingdom. It includes a comparison between 2015 and 2019 to show which regions are gaining and which are losing national significance within the sectors overall employment figures.<sup>8</sup> Life Sciences employment is the combination of both Pharmaceuticals and Medical Technology sub-sectors.

The ‘Golden Triangle’ of Life Sciences employment extends from Oxford in the South East, London, and Cambridge in the East of England. These three regions combined account for 49% of the sector’s employment.

8. Office for Life Sciences: Bioscience and health technology sector statistics 2019

### Employment Forecasts

Table 3 shows the estimated demand for all new and replacement jobs into the Life Sciences sector within the West Midlands region between 2019 and 2030. ‘Expansion demand’ shows only the anticipated growth within the sector, whereas ‘Total Inflow’ considers both sector growth and replacement jobs. Total Inflow should therefore be considered as the total number of jobs required in order to meet expected demand. The model assumes equal growth in all occupations across the sector.

Based on historical national trends, average annual growth rates of 1.2% for Pharmaceuticals and 3.6% for Medical Technology have been assumed. This is a high growth scenario and was calculated to meet ambitious growth plans for the sector set out in the Life Sciences Industrial Strategy, and subsequent Sector Deals.<sup>9,10,11</sup> If realised, total Life Sciences employment within the West Midlands region could grow from 17,320 to 23,501 by 2030, a rise of nearly 36% overall. To sustain this level of growth within the sector, a total of 9,937 jobs will be required within the region by 2030 (6,181 to meet expansion demand and the remaining 3,756 to replace retirees).

Please note: the forecasts were calculated prior to the Coronavirus pandemic and at present, there is insufficient data available to produce updated forecasts that do consider the impact of the pandemic.

Table 3: Employment forecasts for Life Sciences sector within the West Midlands region

| West Midlands region Pharmaceuticals employment forecast |       |       |        |
|--|-------|-------|--------|
|  | 2019  | 2025  | 2030   |
| Employment   | 6,200 | 6,674 | 7,096  |
| % Increase   |       | +7.7% | +14.5% |
| Expansion Demand   |       | 474   | 896    |
| Total Inflow - New & Replacement Jobs                    |       | 957   | 2,159  |

| West Midlands region Medical Technology employment forecast |        |        |        |
|---|--------|--------|--------|
|   | 2019   | 2025   | 2030   |
| Employment  | 11,120 | 13,747 | 16,405 |
| % Increase  |        | +23.6% | +47.5% |
| Expansion Demand  |        | 2,627  | 5,285  |
| Total Inflow - New & Replacement Jobs                       |        | 3,540  | 7,777  |

| West Midlands region Life Sciences employment forecast |        |        |        |
|--|--------|--------|--------|
|  | 2019   | 2025   | 2030   |
| Employment   | 17,320 | 20,421 | 23,501 |
| % Increase   |        | +17.9% | +35.7% |
| Expansion Demand                                       |        | 3,101  | 6,181  |
| Total Inflow - New & Replacement Jobs                  |        | 4,497  | 9,937  |

9. Office for Life Sciences: Life Sciences: Industrial Strategy, 2017  
 10. Office for Life Sciences: Life Sciences Sector Deal 1, 2017  
 11. Office for Life Sciences: Life Sciences Sector Deal 2, 2018

### Employment Demographics

In order to realise the growth potential for the Life Sciences sector, there is a recognised need to ensure a diverse future workforce to meet the sectors substantial skills demands. Equally, it is now widely accepted that companies that attract and develop individuals from the widest pool of available talent consistently perform better. Encouragingly, there are now more young people studying Science, Technology, Engineering, and Maths (STEM) courses at university than ever before.<sup>12</sup> Interest in science is growing too, with research suggesting that young people are now more likely to pursue a career in science as a result of the Coronavirus pandemic.<sup>13</sup>

However, it is important to take stock of the sector’s demographic data, to serve as the evidence base and inform action for the sector. Unless stated otherwise, the following statistics are taken from ONS Labour Force Survey and represent the wider UK Life Sciences sector. Table 4 shows a full breakdown of demographic data.

- Gender profile of 56% male compared to 44% female.
- Women account for 40% of ‘Managers, Directors and Senior Officials’, whereas they make up around 70% of ‘Administrative and Secretarial’ occupations.
- Women account for 37% of employees aged 50 and above across all occupational codes in the sector, compared to 47% in the wider UK workforce.
- Less than 1% of employees are ‘Black/African/Caribbean/Black British’ in the sector, compared to approximately 3% in the wider UK economy.
- 11% of the workforce have a disability, either with a disability that limits their ‘day-to-day activities’ (DDA), or one that is ‘work-limiting’, or both. This compares to nearly 16% in the wider UK economy.
- The Social Mobility Commission estimates that just 9% of Life Science professionals are from a working-class background.<sup>14</sup>

Specific recommendations for employer action are detailed in the SIP: Life Sciences Equality, Diversity & Inclusion report.<sup>15</sup> They are based around four key themes: Organisational Culture; Attraction, Perception and Recruitment; Career Progression and Retention; Measurement & Accountability.

Table 4: Employment demographics for UK Life Sciences sector employees, 2019<sup>16</sup>

| Gender profile         |       |        | Disability profile     |                                       |              |                             |              |
|------------------------|-------|--------|------------------------|---------------------------------------|--------------|-----------------------------|--------------|
| Industry               | Male  | Female | Industry               | DDA disabled & work-limiting disabled | DDA disabled | Work-limiting disabled only | Not disabled |
| Pharmaceuticals        | 52.2% | 47.8%  | Pharmaceuticals        | 3.89%                                 | 3.98%        | 0.97%                       | 91.15%       |
| Medical Technology     | 57.7% | 42.3%  | Medical Technology     | 1.65%                                 | 5.36%        | 3.28%                       | 89.71%       |
| Research & Development | 60.7% | 39.3%  | Research & Development | 7.25%                                 | 5.26%        | 1.63%                       | 85.86%       |
| Total Life Sciences    | 56.4% | 43.6%  | Total Life Sciences    | 4.53%                                 | 4.74%        | 1.73%                       | 89.00%       |
| Total UK Workforce     | 52.7% | 47.3%  | Total UK Workforce     | 8.43%                                 | 5.55%        | 1.68%                       | 84.35%       |

| Age profile         |       |       |       |
|---------------------|-------|-------|-------|
| Industry            | 16-29 | 30-50 | 50+   |
| Total Life Sciences | 20.3% | 52.7% | 27.0% |
| Total UK Workforce  | 22.9% | 44.9% | 32.2% |

| Ethnicity profile   |        |                               |        |           |             |         |                            |   |                    |
|---------------------|--------|-------------------------------|--------|-----------|-------------|---------|----------------------------|---|--------------------|
| Industry            | White  | Mixed/ Multiple ethnic groups | Indian | Pakistani | Bangladeshi | Chinese | Any other Asian background | Black/African/ Caribbean/ Black British | Other ethnic group |
| Total Life Sciences | 88.09% | 1.13%                         | 4.42%  | 1.77%     | 0.25%       | 0.72%   | 0.64%                      | 0.87%                                   | 2.11%              |
| Total UK Workforce  | 87.96% | 1.12%                         | 2.63%  | 1.45%     | 0.61%       | 0.46%   | 1.17%                      | 3.07%                                   | 1.53%              |

12. Department for Education: More young people are taking STEM subjects than ever before, 2021  
 13. Engineering UK: Young people and Covid-19, 2020  
 14. Social Mobility Commission: Social Mobility, the Class Pay Gap and Intergenerational Worklessness  
 15. SIP: Life Sciences: Equality, Diversity & Inclusion Report, 2021  
 16. Office for National Statistics: Labour Force Survey 4 Quarter Average, 2019

## Gender Pay Gap

The SIP conducted an analysis of pay gap information published by 78 large employers within Life Sciences, and found the median gender pay gap for these companies was approximately 10%.<sup>17</sup> This compares to the UK average for all employee jobs across all industries of around 17.4%.<sup>18</sup> As such, the gender pay gap within the Life Sciences sector is not as pronounced as it is in the wider economy.

## Average Pay

In 2019, all three sub-sectors within Life Sciences, shown in Table 5, paid higher than average earnings compared to the median for all employee jobs across all industries within the UK.<sup>19</sup> This is likely due to a significant proportion of the workforce holding higher level qualifications, compared to the wider economy. This is discussed in more detail later in the report. This data is for the United Kingdom, with sector specific wage data for the region unavailable. However, the median annual pay (gross) for all employee jobs across all industries within the West Midlands region was approximately £23,870.

## Turnover

The UK Life Sciences sector is hugely valuable in terms of revenue to the UK economy, with an estimated turnover of £80.17bn annually in 2019. The West Midlands region generated approximately 8% of total UK Life Sciences turnover, with less than 7% of total employment.<sup>20</sup> This highlights the significant productivity of this sector, and its importance to the West Midlands economy.

Table 5: Average (median) annual pay (gross) for all employee jobs for each UK Life Sciences sub-sector

| Average earnings           |          |
|----------------------------|----------|
| UK median (All industries) | £24,937  |
| Pharmaceuticals            | £ 34,016 |
| Medical Technology         | £27,651  |
| Research & Development     | £ 39,062 |

Table 6: Life Sciences financial turnover figures for West Midlands region compared to UK total

|      | Turnover (£bn)       |               |                    |               |                     |               |                      |                    |                     |  |
|------|----------------------|---------------|--------------------|---------------|---------------------|---------------|----------------------|--------------------|---------------------|--|
|      | West Midlands region |               |                    |               |                     |               | United Kingdom Total |                    |                     |  |
|      | Pharmaceuticals      | % of UK Total | Medical Technology | % of UK Total | Total Life Sciences | % of UK Total | Pharmaceuticals      | Medical Technology | Total Life Sciences |  |
| 2019 | £ 4.81bn             | 8.73%         | £1.68bn            | 6.55%         | £6.49bn             | 8.04%         | £55.08bn             | £25.63bn           | £80.71bn            |  |
|      | 74.11%               |               | 25.89%             |               | 100.00%             |               |                      |                    |                     |  |

17. Data Accessed: 'Reporting Year 2019-20' (<https://gender-pay-gap.service.gov.uk/viewing/download>)

18. Office for National Statistics: Annual Survey of Hours and Earnings (ASHE): Gender Pay Gap, 2020 updated provisional

19. Office for National Statistics: Annual Survey of Hours and Earnings (ASHE), 2020

20. Office for Life Sciences: Bioscience and health technology sector statistics 2019

## Value Added Per Employee

Value added per employee is a measure of labour productivity that demonstrates the contribution to the sector of the average individual employee.

Value added per employee within the West Midlands regional Medical Technology sector is an estimated £65,000. This is around 14% lower than the UK average for the Medical Technology sector at £75,900.<sup>21</sup> However, this is still significantly higher than the average value added per employee for the wider regional economy which is approximately £47,000. The reasons behind this could be a subject for conversation in the local working group, however it does suggest there is scope in the region for the sector to secure further growth and increased productivity.

Value added per employee within the wider UK Pharmaceuticals industry is approximately £109,500, more than twice the UK average. This has been calculated using the 2019 annual output figure for Gross Value Added (GVA) in the UK Pharmaceuticals sector as per the ONS classification, and using employment figures from OLS.<sup>22</sup> Specific Pharmaceuticals sector data for the West Midlands region is not available.

Together the Medical Technology and Pharmaceuticals manufacturing sectors are two of the UK's most productive sectors. The growth that is predicted for both sectors will create high value jobs and drive economic productivity in the region.

## Number of Life Sciences Businesses

OLS publish a dataset each year estimating the total number of Life Sciences companies in the United Kingdom.<sup>23</sup> Table 7 shows the breakdown of Pharmaceuticals and Medical Technology companies in the West Midlands region and the three individual LEP areas, from the latest available dataset in 2019.

Table 8 shows the combined breakdown of Pharmaceuticals and Medical Technology companies in the West Midlands region in 2019, compared to the same data in 2015.

Please note: The cells coloured in red indicate where there has been a drop in the number of companies of that type, whereas amber indicates no change, and green shows where an increase has been observed. The data suggests that some micro sized companies have grown into small companies, and equally some small companies have grown into medium sized businesses.

Table 7: Pharmaceuticals and Medical Technology companies in the West Midlands region in 2019

|                                     | Pharmaceuticals |                  |                    |              |       | Medical Technology |                  |                    |              |       |
|-------------------------------------|-----------------|------------------|--------------------|--------------|-------|--------------------|------------------|--------------------|--------------|-------|
|                                     | Micro (0 to 9)  | Small (10 to 49) | Medium (50 to 249) | Large (250+) | Total | Micro (0 to 9)     | Small (10 to 49) | Medium (50 to 249) | Large (250+) | Total |
| Black Country LEP                   | 4               | 3                | 1                  | 1            | 9     | 31                 | 20               | 6                  | 1            | 58    |
| Coventry and Warwickshire LEP       | 7               | 8                | 0                  | 0            | 17    | 66                 | 28               | 8                  | 0            | 102   |
| Greater Birmingham and Solihull LEP | 20              | 8                | 6                  | 2            | 34    | 113                | 51               | 13                 | 2            | 179   |
| LEPs combined                       | 31              | 19               | 7                  | 3            | 60    | 210                | 99               | 27                 | 3            | 339   |
| West Midlands (Region)              | 51              | 27               | 11                 | 4            | 93    | 315                | 154              | 45                 | 4            | 518   |

Table 8: All Life Sciences companies in the West Midlands region in 2019 compared to 2015

|                                     | 2015           |                  |                    |              |       | 2019           |                  |                    |              |       |
|-------------------------------------|----------------|------------------|--------------------|--------------|-------|----------------|------------------|--------------------|--------------|-------|
|                                     | Micro (0 to 9) | Small (10 to 49) | Medium (50 to 249) | Large (250+) | Total | Micro (0 to 9) | Small (10 to 49) | Medium (50 to 249) | Large (250+) | Total |
| Black Country LEP                   | 44             | 23               | 4                  | 1            | 72    | 35             | 23               | 7                  | 2            | 67    |
| Coventry and Warwickshire LEP       | 82             | 25               | 10                 | 3            | 120   | 73             | 36               | 8                  | 2            | 119   |
| Greater Birmingham and Solihull LEP | 142            | 63               | 18                 | 3            | 226   | 133            | 59               | 19                 | 2            | 213   |
| LEPs combined                       | 268            | 111              | 32                 | 7            | 418   | 241            | 118              | 34                 | 6            | 399   |
| West Midlands (Region)              | 372            | 162              | 50                 | 9            | 593   | 366            | 181              | 56                 | 8            | 611   |

21. MI Health: Midlands MedTech Sector Analysis, 2019

22. Office for National Statistics: GDP output approach – low-level aggregates, 2019

23. Office for Life Sciences: Biotechnology and health technology sector - life sciences company data 2019

### Occupational Breakdown

Table 9 shows the breakdown of total UK Life Sciences employment by major occupation group.<sup>24</sup> It shows that nearly 40 % of the UK Life Sciences workforce are employed in 'Professional Occupations'.

Table 9: UK Life Sciences employment breakdown by major occupation group

|                     | Major occupation group (main job)        |                          |  |                                    |                            |   |  |                                       |                        |
|---------------------|--|--------------------------|--|------------------------------------|----------------------------|---|--|---------------------------------------|------------------------|
|                     | Managers, Directors And Senior Officials | Professional Occupation' | Associate Professional and Technical Occupations | Admin' and Secretarial Occupations | Skilled Trades Occupations | Caring, Leisure and Other Service Occupations | Sales and Customer Service Occupations | Process, Plant And Machine Operatives | Elementary Occupations |
| Life Sciences Total | 12.02 %                                  | 39.49 %                  | 24.74 %  | 7.54 %                             | 2.11 %                     | 0.44 %  | 1.99 %                                 | 5.78 %                                | 5.90 %                 |

The ONS Annual Population Survey 2019 identified 66 four-digit SOC codes that are relevant to the wider UK Life Sciences sector. Ranging from 'Biological scientists and biochemists' and 'Laboratory technicians', to 'Conservation professionals' and 'Medical practitioners'.<sup>25</sup> Table 10 shows the 20 most populous SOC codes in 2019. These 20 occupational codes account for approximately 70 % of all employment within the UK Life Sciences sector.

Table 10: UK Life Sciences employment breakdown by four-digit SOC code (Top 20 occupations 2019)

| UK Life Sciences 20 most common occupations                |                |
|--|----------------|
| SOC10M Occupation (main job)                               | % of workforce |
| 2112 'Biological scientists and biochemists'               | 9.6 %          |
| 3545 'Sales accounts and business development mngrs'       | 8.5 %          |
| 3111 'Laboratory technicians'                              | 6.2 %          |
| 2119 'Natural and social science professionals n.e.c.'     | 4.9 %          |
| 2462 'Quality assurance and regulatory professionals'      | 4.1 %          |
| 2150 'Research and development mngrs'                      | 3.8 %          |
| 2136 'Programmers and software development professionals'  | 3.3 %          |
| 2129 'Engineering professionals n.e.c.'                    | 3.1 %          |
| 1121 'Production mngrs and directors in manufacturing'     | 3.1 %          |
| 4159 'Other administrative occupations n.e.c.'             | 2.8 %          |
| 3218 'Medical and dental technicians'                      | 2.6 %          |
| 2426 'Business and related research professionals'         | 2.2 %          |
| 4122 'Book-keepers, payroll mngrs and wages clerks'        | 2.2 %          |
| 2111 'Chemical scientists'                                 | 2.1 %          |
| 8114 'Chemical and related process operatives'             | 2.1 %          |
| 9260 'Elementary storage occupations'                      | 2.1 %          |
| 2425 'Actuaries, economists and statisticians'             | 1.8 %          |
| 2424 'Business and financial project mngmnt professionals' | 1.8 %          |
| 2113 'Physical scientists'                                 | 1.7 %          |
| 1139 'Functional mngrs and directors n.e.c.'               | 1.6 %          |

24. Office for National Statistics: Labour Force Survey 4 Quarter Average, 2019  
 25. Office for National Statistics: Annual Population Survey, 2018

### Qualification Level

Table 11 shows a breakdown of UK Life Sciences employment by highest level of qualification.<sup>26</sup> It shows that more than 62 % of employees within Life Sciences hold a degree or equivalent level qualification (Levels 6 and 7+), this compares to approximately 36 % of the wider UK workforce.

*\*Please note: the Labour Force Survey (2019) shows that no one currently working in the Life Sciences sector holds their highest qualification at Level 4. This is likely to be an error associated with cutting the data to this level of granularity. For comparison, the SIP performed the same analysis for the SIP Life Sciences 2030 Skills Strategy using data for 2018. That year there was an estimated 0.3% of employees who held their highest qualification at Level 4. It is therefore likely that a very small percentage of Life Sciences employees hold their highest qualification at Level 4.*

### Apprenticeships

Tables 12a and b show a comparison of the number of Science, Technology, Engineering, and Mathematics (STEM) apprenticeship starts and achievements in the West Midlands region compared to the UK total. They also include data specific to the West Midlands combined authority area, with LEP specific data unavailable. The data is for the academic year 2019-2020.<sup>27</sup>

Table 11: UK Life Sciences employment breakdown by highest qualification level

| UK Life Sciences employment by highest qualification level |         |
|--|---------|
| Level 7 and above  | 31.45 % |
| Level 6  | 30.64 % |
| Level 5  | 7.38 %  |
| Level 4  | - *     |
| Level 3  | 14.24 % |
| Level 2  | 10.80 % |
| Level 1  | 3.89 %  |
| No qualifications  | 1.18 %  |
| Unknown  | 0.43 %  |

Please note: The data contained within tables 12a and b are not specifically linked, for example, people starting an apprenticeship in 2019-2020, will not count towards the achievements total until the completion of their course. Equally, the achievements for 2019-2020 are from individuals who started their course during previous academic years.

The data shows that providers within the West Midlands region account for 12 % of all STEM apprenticeship starts and 12.8 % of apprenticeship achievements at all levels.

Tables 12a & 12b: STEM apprenticeship starts and achievements breakdown by level of qualification, split by West Midlands region compared to UK total

|                       | STEM Apprenticeship Starts (AUG 19 - JUL 20) |          |         |         |         |         |        |
|-----------------------|--|----------|---------|---------|---------|---------|--------|
|                       | Intermediate                                 | Advanced | Higher  |         |         |         | Total  |
|                       | Level 2                                      | Level 3  | Level 4 | Level 5 | Level 6 | Level 7 |        |
| Under 19              | 1325   | 2341     | 55      | 6       | 237     | 0       | 3964   |
| 19 - 24               | 702  | 2594     | 314     | 34      | 553     | 23      | 4220   |
| 25+                   | 1135   | 1023     | 417     | 24      | 226     | 65      | 2890   |
| WM Region             | 3162   | 5958     | 786     | 64      | 1016    | 88      | 11074  |
| WM Combined Authority | 1371   | 2502     | 544     | 59      | 787     | 80      | 5343   |
| UK Total              | 31529  | 44900    | 8252    | 667     | 5984    | 1002    | 92334  |
| WM vs UK              | 10.0 %                                       | 13.3 %   | 9.5 %   | 9.6 %   | 17.0 %  | 8.8 %   | 12.0 % |

|                       | STEM Apprenticeship Starts (AUG 19 - JUL 20) |          |         |         |         |         |        |
|-----------------------|--|----------|---------|---------|---------|---------|--------|
|                       | Intermediate                                 | Advanced | Higher  |         |         |         | Total  |
|                       | Level 2                                      | Level 3  | Level 4 | Level 5 | Level 6 | Level 7 |        |
| Under 19              | 1053   | 949      | 60      | 2       | 8       | 0       | 2072   |
| 19 - 24               | 708  | 1177     | 100     | 11      | 29      | 1       | 2026   |
| 25+                   | 1190   | 366      | 55      | 2       | 3       | 0       | 1616   |
| WM Region             | 2951   | 2492     | 215     | 15      | 40      | 1       | 5714   |
| WM Combined Authority | 1338   | 1015     | 139     | 15      | 39      | 0       | 2546   |
| UK Total              | 20972  | 20889    | 2105    | 347     | 411     | 60      | 44784  |
| WM vs UK              | 14.1 %                                       | 11.9 %   | 10.2 %  | 4.3 %   | 9.7 %   | 1.7 %   | 12.8 % |

26. Office for National Statistics: Labour Force Survey 4 Quarter Average, 2019  
 27. ONS: Apprenticeships and traineeships: Academic Year 2019/20



Table 13 shows both the number of starts and the number of achievements on twelve science industry specific apprenticeship standards, the development of which were supported by SIP. The data is for academic year 2019-2020, and shows a comparison of the West Midlands region compared to the UK total. These apprenticeship standards started to be introduced in 2015 and have since grown in popularity. Figure 4 shows the annual and cumulative total number of apprenticeship starts on these science industry specific standards, including recent data for Q1 in academic year 2020/2021.

Table 13: Apprenticeship starts and achievements on science industry specific standards split by West Midlands region compared to UK total in academic year 2019/20

| Science industry specific apprenticeship standards, AUG 19 - JUL 20 |                       |             |                             |            |
|---|-----------------------|-------------|-----------------------------|------------|
| Standard  | Apprenticeship Starts |             | Apprenticeship Achievements |            |
|   | West Midlands         | UK Total    | West Midlands               | UK Total   |
| L2 Science Manufacturing Process Operative                          | 0                     | 37          | 0                           | 11         |
| L3 Laboratory Technician  | 58                    | 298         | 47                          | 152        |
| L3 Science Manufacturing Technician                                 | 15                    | 273         | 0                           | 37         |
| L3 Science Industry Maintenance Technician                          | 0                     | 256         | 0                           | 24         |
| L5 Laboratory Scientist   | 0                     | 6           | 1                           | 67         |
| L5 Technician Scientist   | 2                     | 77          | 0                           | 0          |
| L6 Laboratory Scientist   | 3                     | 121         | 0                           | 20         |
| L6 Science Industry Process/Plant Engineer                          | 6                     | 12          | 0                           | 0          |
| L6 Clinical Trials Specialist                                       | 0                     | 19          | 0                           | 0          |
| L7 Research Scientist   | 0                     | 29          | 0                           | 0          |
| L7 Bioinformatics Scientist   | 0                     | 16          | 0                           | 0          |
| L7 Regulatory Affairs Specialist                                    | 0                     | 23          | 0                           | 0          |
| <b>Total</b>  | <b>84</b>             | <b>1167</b> | <b>48</b>                   | <b>311</b> |

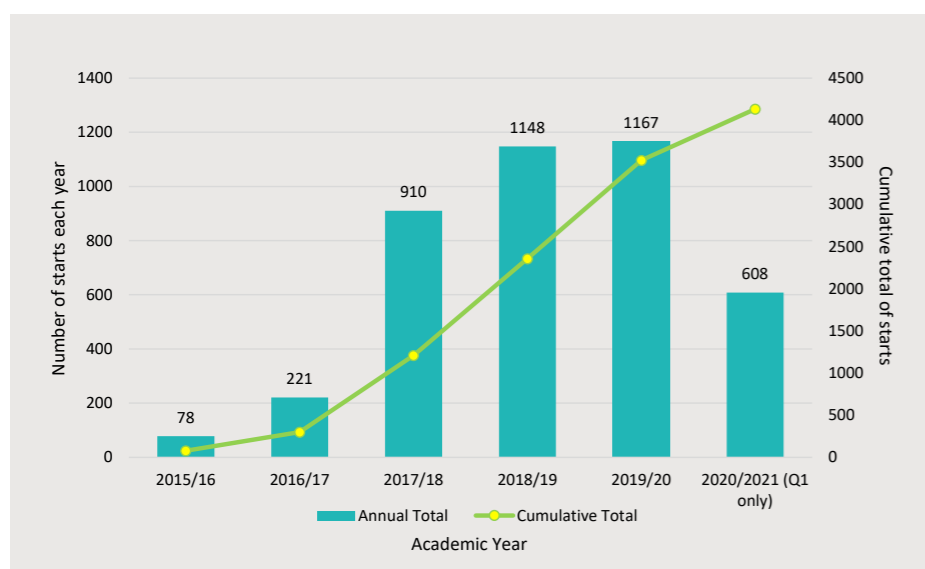


Figure 4: Total apprenticeship starts on science industry specific standards - annual and cumulative, whole of UK

### Higher Education

A total number of 3,720 people left Higher Education (HE) providers across the UK in 2016/17 and started working for Life Sciences companies within six months of graduating.<sup>28, 29</sup> These 3,720 graduates came from a total of 127 different areas of study. Table 14 shows the top 20 most common areas of study which account for over 70% of these graduates. From left to right the five columns show:

- Total number of people who graduated from area of study and entered into Life Sciences employment (whole of UK).
- Total number of people who graduated from area of study at a HE provider located in the West Midlands region.
- Percentage of graduates who studied in the West Midlands region compared to the whole of UK.
- Total number of people who graduated from area of study across all UK HE providers.
- Percentage of all UK graduates from area of study who entered into Life Sciences.

Table 14: Top 20 most common areas of HE study in order of importance to UK Life Sciences sector

| UK Life Sciences sector - Top 20 most common areas of HE study |  |                                       |                               |                                    |                                      |
|--|--|---------------------------------------|-------------------------------|------------------------------------|--------------------------------------|
| Area of study  | Entered Life Sciences employment (whole of UK) | Studied subject area in West Midlands | % of WM graduates vs UK Total | Studied subject area (whole of UK) | % of all UK graduates who entered LS |
| (F1) Chemistry   | 331  | 405                                   | 5.88%                         | 6877                               | 4.82%                                |
| (C1) Biology   | 309  | 589                                   | 6.14%                         | 9603                               | 3.22%                                |
| (C7) Molecular biology, biophysics & biochemistry              | 220  | 506                                   | 11.04%                        | 4583                               | 4.80%                                |
| (B2) Pharmacology, toxicology & pharmacy                       | 213  | 825                                   | 11.44%                        | 7904                               | 2.70%                                |
| (B9) Others in subjects allied to medicine                     | 156  | 2264                                  | 12.11%                        | 18688                              | 0.83%                                |
| (H3) Mechanical engineering                                    | 130  | 1208                                  | 10.79%                        | 11193                              | 1.16%                                |
| (N2) Management studies  | 128  | 3516                                  | 11.36%                        | 30944                              | 0.41%                                |
| (A3) Clinical medicine   | 122  | 740                                   | 6.30%                         | 11740                              | 1.04%                                |
| (N1) Business studies  | 111  | 5000                                  | 12.53%                        | 39896                              | 0.28%                                |
| (B1) Anatomy, physiology & pathology                           | 105  | 507                                   | 7.01%                         | 7227                               | 1.46%                                |
| (F3) Physics   | 97   | 424                                   | 7.36%                         | 5764                               | 1.68%                                |
| (H6) Electronic & electrical engineering                       | 93   | 940                                   | 9.17%                         | 10251                              | 0.90%                                |
| (H8) Chemical, process & energy engineering                    | 93   | 533                                   | 11.61%                        | 4590                               | 2.02%                                |
| (I1) Computer science  | 83   | 2063                                  | 10.98%                        | 18786                              | 0.44%                                |
| (C9) Others in biological sciences                             | 82   | 193                                   | 7.43%                         | 2593                               | 3.16%                                |
| (H1) General engineering                                       | 81   | 740                                   | 13.59%                        | 5447                               | 1.49%                                |
| (C8) Psychology  | 75   | 2220                                  | 7.66%                         | 28985                              | 0.26%                                |
| (C5) Microbiology  | 65   | 81                                    | 5.96%                         | 1355                               | 4.76%                                |
| (B8) Medical technology  | 59   | 254                                   | 8.07%                         | 3140                               | 1.88%                                |
| (G1) Mathematics   | 57   | 982                                   | 9.27%                         | 10589                              | 0.54%                                |
| <b>Top 20 combined</b>   | <b>2609</b>                                    | <b>23987</b>                          | <b>9.99%</b>                  | <b>240154</b>                      | <b>1.09%</b>                         |
| <b>Total Life Sciences leavers destinations 16/17</b>          | <b>3720</b>                                    |                                       |                               |                                    |                                      |

28. HESA Student Record 2016/17: Students in Higher Education Providers and Destinations of Leavers from Higher Education Providers 2016/17  
 29. HESA Student Record 2016/17: Students in Higher Education Providers 2016/17

Table 15 shows that of the 3,720 graduates who entered into Life Sciences within six months of leaving education, just over 7% (265) of them studied at a HE provider based in the West Midlands region.<sup>30</sup> Less than 4% of the total found employment at a Life Sciences company in the West Midlands region. Data earlier in this report show that approximately 7% of UK Life Sciences employment is based in the West Midlands region. The below suggests that 7% of graduates entering the industry study within West Midlands region, and yet less than 4% stay there to work. This may suggest either a problem with retaining graduates, or a lack of opportunities for graduates, within the region.

Please note, not all of the 3,720 graduates stayed in the United Kingdom to work within Life Sciences. Approximately 14% moved abroad for work, with Germany, Ireland and the United States being popular Life Sciences destinations.

Table 15: Breakdown of graduates who entered into Life Sciences employment, showing location of employer and region of HE provider

| HESA Student Record 2016/17 | West Midlands |                        |               |                       | Total UK    |
|-----------------------------|---------------|------------------------|---------------|-----------------------|-------------|
|                             | Industry      | Location of employment | % of Total UK | Region of HE provider |             |
| Pharmaceuticals             | 19            | 1.85%                  | 79            | 7.70%                 | 1026        |
| Medical Technology          | 20            | 3.80%                  | 32            | 6.07%                 | 527         |
| Research & Development      | 107           | 4.94%                  | 154           | 7.11%                 | 2167        |
| <b>Total Life Sciences</b>  | <b>146</b>    | <b>3.92%</b>           | <b>265</b>    | <b>7.12%</b>          | <b>3720</b> |

30. HESA Student Record 2016/17: Students in Higher Education Providers and Destinations of Leavers from Higher Education Providers 2016/17

## Sought After Skills

The following information has been taken from the SIP Life Sciences 2030 Skill Strategy. It is intended to provide an understanding of overarching skills needs for the UK Life Sciences sector and is not specific to the West Midlands region.<sup>31</sup>

### Digital, computational, and statistical literacy:

In line with other sectors, the UK Life Sciences sector is required to upskill its workforce to make the most of digitalisation. There is a reported gap between US and UK capability in this area. Therefore, to remain competitive, the UK Life Sciences sector should ensure there is a strong flow of data science skills, including technical experts and staff who combine laboratory and computational skills by:

- Upskilling existing staff, some of whose roles may not previously have required data or computational skills;
- Enhancing staff's ability to manage and analyse large datasets;
- Promoting familiarisation with Big Data technologies to maximise the benefits of Artificial Intelligence, e.g. by using bespoke training modules as part of Continuing Professional Development (CPD) and degree/apprenticeship programmes;
- Attracting, retaining and developing more data scientists, particularly with data modelling and programming skills, (e.g. to build programs and infrastructure for medicines manufacturing), by developing the talent pipeline (e.g. industrial placements for students prior to joining the sector, and refresher modules for existing staff);
- Attracting and retaining more health economists to maximise the benefits of larger and richer datasets in the sector;
- Building the capability of chemical and process control engineers to produce 'digital twins' to generate efficiencies in development processes.

### Leadership skills:

Especially in the promotion of the digitalisation of the sector by defining and promoting excellence in leadership in different roles, and by addressing skills shortages in particular areas, e.g. protein science.

### Communication skills:

Given the pace of technological development, there is a need to improve the sector's ability to communicate new advances in medicines and medical technology, e.g. more effective use of social media via engaging content.

### Translation and commercialisation skills:

For the sector to make the most of the UK's ground-breaking research there is a need to:

- Improve the pipeline of academic innovation flowing to business development in industry;
- Align the skills pipeline to the innovation pipeline;
- Increase the efficiency with which research findings are transferred to industry;
- Breakdown the 'artificial walls' between careers in academic research and industry.

### Skills updates to reflect technological and regulatory change

In particular:

- Acknowledge the broad spectrum of digital capability in the workforce and enable staff to adapt and retrain quickly;
- Keep up with and take advantage of advances in manufacturing techniques, in particular additive manufacturing, by updating skills for (chemical and process control) engineers and staff's ability to access and utilise equipment online;
- Broader and deeper knowledge of robotics, e.g. for scientists;
- Increasing the number of people trained in industry regulatory requirements, e.g. Qualified Persons;
- Develop curricula to reflect sector specific skills for data scientists.

### Skills for cross-team and cross-disciplinary working:

Address skill gaps and shortages by increasing and enhancing cross-team and cross-disciplinary working – through development of 'intangible skills'.

### Succession planning for an ageing workforce:

Life Sciences, along with other sectors in the UK, has an ageing workforce. Therefore, it is important for the sector to plan for and enable the transfer of knowledge and skills to the next generation, particularly for companies that have bespoke technology. The sector also needs to review and adapt its employment practices in order to retain older workers, e.g. through more flexible working arrangements.

### Promotion and facilitation of agile careers:

The scale of change across industry will generate opportunities to attract workers from outside the Life Sciences sector, however the competition for talent from other sectors, especially for digital skills, will be high. Therefore, the sector is required to promote itself as an attractive career option, provide clear routes to entry and appropriate training offers to facilitate career agility.

### Continuing Professional Development (CPD):

The UK Life Sciences sector lacks the infrastructure to deliver life-long learning to reskill and upskill the workforce. This adversely affects the long-term attractiveness and resilience of the talent base, for example, in developing the digital capabilities that the sector requires. The sector should seek to introduce and support CPD and lifelong training to ensure a skilled and committed workforce that is fit for the industry of the future, as well as industry of today.

### Holistic sales and marketing skills:

To maintain the sector's international competitiveness, there is a requirement to enhance sales and marketing efforts, particularly by reinforcing the skills required to take new products to market. To do this, project management and 'intangible skills' should complement the technical knowledge that is essential to the delivery of effective marketing.

31. SIP Life Sciences 2030 Skills Strategy

## Next Steps

With a rich history of innovation and productivity, the West Midlands is perfectly positioned to lead from the front, in terms of growth, productivity and skills opportunities in a post COVID-19 economic recovery.

The recent Science & Innovation Audit for the West Midlands has identified five key technology themes for the region: including advanced materials and medical technology & healthcare.<sup>32</sup>

The region has nine universities, producing 55,885 graduates a year and it is home to one of Europe's youngest populations, with 1.3 million residents under 25. Equally, there has been a rise in regional employment for the sector, which currently stands at approximately 17,320. The challenge will be to ensure that the right mix of skills are in place to unlock the future potential.

The region is home to a range of innovative companies, including university spin-outs across diagnostics, devices and digital health. There is clear growth in the number of SMEs in the region, pushing the total number of local Life Sciences businesses to over 600. It is well known that start-ups contribute to economic dynamism by spurring innovation and injecting competition and so it is imperative that we nurture young entrepreneurs and equip them with the leadership skills to compete globally.

West Midlands was the birthplace of the industrial revolution and has a long history in manufacturing. At the start of 2020, health technology companies were needed to respond to the COVID-19 virus. Manufacturers of products as diverse as masks and gowns, hand sanitiser, ventilators and respiratory products, and digital tracking and monitoring faced unprecedented demand. The urgent need for supplies encouraged numerous companies new to the sector to pivot their production facilities.

Whilst the full impact of the pandemic is yet to be understood, it has emphasised the significance of having a strong manufacturing base in the UK and robust domestic supply chains. Government have set up specific initiatives such as the 'Medicines and Diagnostics Manufacturing Transformation Fund' to give financial support to manufacturing projects within the UK Life Sciences sector.<sup>33</sup> Equally, 2020 saw record levels of private equity investment into the sector with over £2.8bn raised by UK-based biotech companies.<sup>34</sup> The West Midlands region is well placed to take advantage of new investment into the sector.

We are at a critical point. The sector must continue to evolve and adapt to technological, economic and societal change in order to maintain its global competitive advantage through a diverse and highly skilled workforce. As the sector grows, investing in technical skills will be critical to accelerate product development, support a robust, indigenous manufacturing base and nurture new innovators and entrepreneurs.

Through the SIP West Midlands we will work with local employers and stakeholders to prioritise local skills needs and deliver skills solutions.

32. West Midlands Combined Authority: *A Science & Innovation Audit for the West Midlands, 2017*

33. <https://www.gov.uk/government/publications/medicines-and-diagnostics-manufacturing-transformation-fund>

34. Bio Industry Association: *The science of success: UK biotech financing in 2020*

## About The Science Industry Partnership

The Science Industry Partnership (SIP) is a powerful member-led alliance, representing science industry companies on the skills issues that matter. We believe that by working in collaboration we are better placed to develop a world-class scientific workforce that enables our industry, and your business, to compete, innovate and grow. With a dedicated strategic focus on the skills agenda, only SIP membership gives you:

- Opportunities to influence Government skills policy
- A platform to unite with like-minded businesses across our sector to collaborate and lead on skills
- Comprehensive skills intelligence, that allows you to identify workforce trends and make smarter decisions
- Access to a vibrant community of science industry professionals
- Dedicated account management from a knowledgeable team who share your passion for skills


By leveraging the combined influence and power of our community, SIP membership opens up exclusive opportunities to influence decisions that affect our industry, together. We're inviting science industry companies of all sizes to join us in partnership. To find out more about this report and how you can get involved, talk to us today.


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*The Science Industry Partnership (SIP) is delivered by Cogent Skills, a not-for-profit, charitable organisation, dedicated to raising the skill levels across Science and Nuclear industries.*

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