



**Biotechnology Industry  
Data Survey 2018**  
Report on key findings

September 24, 2018

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# Executive summary

The Canadian biotechnology industry is cross national with deep roots in all regions of the country, and is a vital component of Canada's push to develop more knowledge-intensive industries.

The Canadian biotechnology industry is one of the country's premiere high technology sectors, acting as a strong engine of innovation, source of highly skilled employment, and destination for investment capital.

In early 2018, BIOTECanada and Deloitte collaborated on the Biotechnology Industry Data Survey (the "Survey") in an effort to fill the void in quality data on the Canadian life sciences industry. The Survey was created to identify key data points outlining the characteristics of the sector across geographies and subsectors, and to describe its economic footprint on the country. BIOTECanada and Deloitte are now pleased to present the results of the inaugural Survey in this report. The objective is to describe the makeup and output of the sector and to contribute to a national conversation around the issues facing the industry and policy options to facilitate its growth.

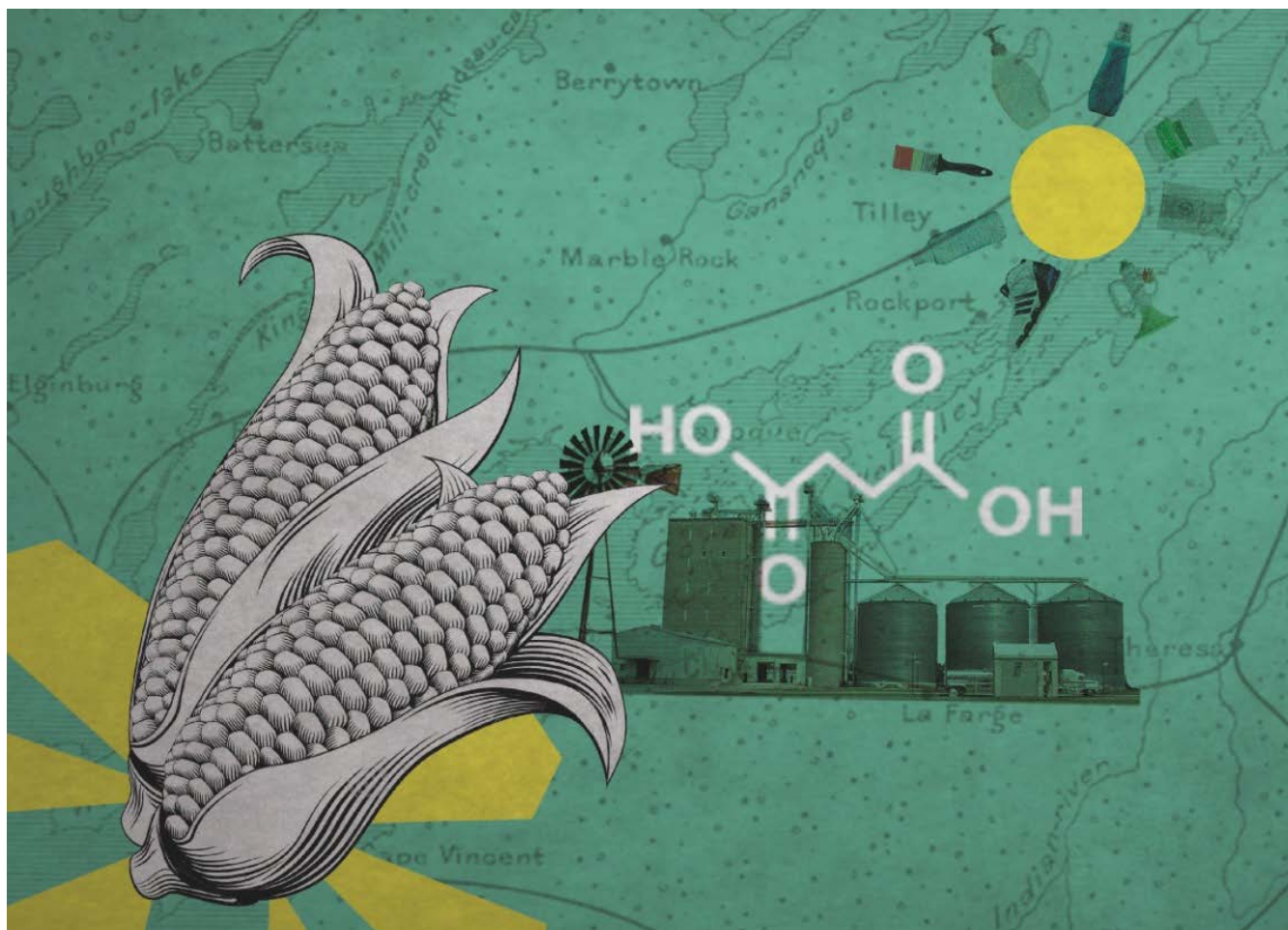
Key highlights from the Survey include:

- Canada's biotechnology sector is composed of many early-stage companies that are expecting significant growth in the future:
  - The majority (67%) of companies in the sector identified themselves as either in the discovery or emerging phase of development in 2017
  - In 2017, 53% of companies employed between 0-10 individuals, and by 2021, as companies expect to grow their labour force, 80% of companies surveyed expect to employ 10 or more people in Canada
  - In 2017, 59% of companies reported revenues between 0-\$0.5 million. By 2021, as companies bring new products to market, the number of companies expecting annual revenue between 0-\$0.5 million decreases to 15%, while 57% of companies expect greater than \$5 million in revenues.
- Companies are expecting to raise additional capital in the coming years to support growth and have identified access to capital as the primary issue facing the sector:
  - The source of capital the largest share of survey respondents (59%) identified they would pursue in the future were government

facilitated programs. Signature programs such as the Scientific Research & Experimental Development Program (SR&ED), and the Industrial Research Assistance Program (IRAP) have been accessed by a large majority of respondents in the past (80% and 65% respectively) and will continue to be a critical source of support in the future

- Opportunities to improve government programs exist. A majority of respondents (61%) reported administrative barriers (timelines, difficulty, extra effort etc.) as the biggest issue with government programs, followed by funding package size (37%), and availability of funding mechanisms (37%)
- Companies are also increasingly looking to raise capital through private markets. The second through fifth most common sources of capital survey respondents expect to access in the future were institutional pharma (51%), venture capital (41%), public financing (30%), and angel investors (20%). Canadian biotechnology companies are underserved by Canadian capital markets, and face challenges attracting the funding they need from international sources.

# Background and methodology



The objective of the Biotechnology Industry Data Survey is to quantify data points that measure the Canadian biotechnology industry, including research and innovation activity, economic impact, operations and talent, financing activity, and growth trajectory.

The Survey was developed jointly by BIOTECCanada and Deloitte, and released to companies publicly. Provincial life sciences and biotechnology industry associations across the country were also engaged to help distribute and promote participation in the Survey.

The Survey was sent to Canadian life sciences companies with involvement in core R&D activity. The Canadian arms of global life sciences companies were excluded, as were companies in the Cannabis

sector. A majority (56%) of respondents classified themselves as a health biotechnology company, with the second highest number of respondents identifying themselves as R&D services (25%). Agricultural and/or veterinary biotechnology and medical technology and devices had third highest proportion of respondents, with 17% each.

### Sub-sector classification

#### **In which sub-sector(s) would your company be classified?**

	Count of respondents <sup>1</sup>
Health biotechnology	117
R&D services	52
Agricultural and/or veterinary biotechnology	36
Medical technology and devices	36
Industrial biotechnology	29
Diagnostics	28
Functional food and natural health products	26
Environmental biotechnology	13
Healthcare IT	10

In total, 208 Canadian companies responded to the survey, representing all regions of the country, and all stages of product development and operations. This provided a robust data set on the operational characteristics of companies across the sector spanning dimensions including research, talent, revenue, financing, and the key issues of concern to the industry. Caution must be given, however, in using this Survey to extrapolate aggregate level statistics for the industry at the national level. This report uses the Survey's data to generate quality insights on the characteristics of the companies in the biotechnology sector, and draws upon secondary research and analysis to support Survey findings and provide commentary at the aggregate level.

<sup>1</sup> Respondents were able to select more than one answer.

# 1. Research and development

## Life-cycle phase

**At which phase do you expect to classify your company in its life cycle in 2018?**

	Count of respondents
Discovery phase	17 (8%)
Emerging phase	100 (50%)
Growth phase	68 (34%)
Maturity phase	16 (8%)
No answer	7

The Canadian biotechnology sector has an aggressive R&D agenda and high expectations for bringing new products to market over the coming 5 years. In 2017, a majority (54%) of respondents identified their companies as operating at an emerging phase of development, while 22% identified themselves in the growth phase. This result describes a sector composed primarily of early-stage companies focused on developing new products and bringing them to market. By the end of 2018, the number of companies expecting to be in the growth phase grew 12 percentage points to 34%. This suggests a high level of optimism for future growth amongst firms in the sector.

### R&D spending 2017, 2018, 2021

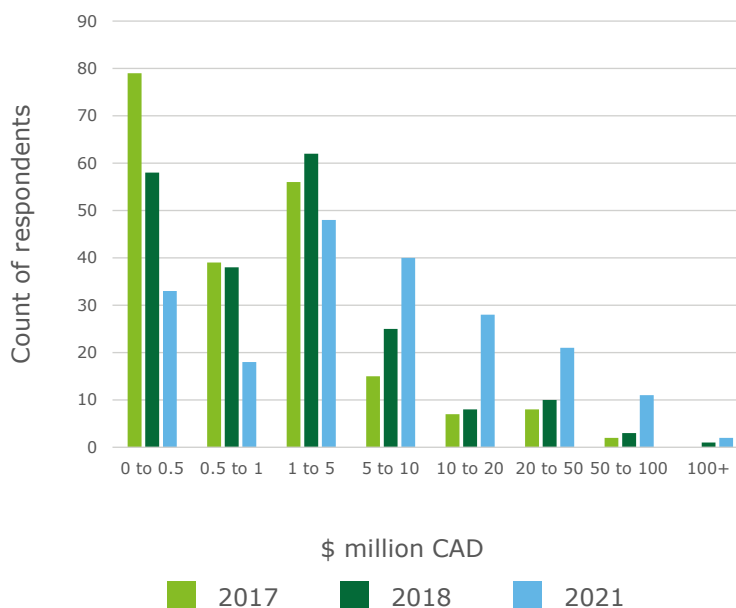
#### What did/do you expect your company to spend on research and development in the following years?

\$ million CAD	Count of respondents		
	2017	2018	2021
0 to 0.5	79 (38%)	58 (28%)	33 (16%)
0.5 to 1	40 (19%)	39 (19%)	19 (9%)
1 to 5	56 (27%)	62 (30%)	48 (24%)
5 to 10	15 (7%)	25 (12%)	40 (20%)
10 to 20	7 (3%)	8 (4%)	28 (14%)
20 to 50	8 (4%)	10 (5%)	21 (10%)
50 to 100	2 (1%)	3 (1%)	11 (5%)
Above 100	0	1 (0.5%)	2 (1%)
No response	1	2	7

38% of respondents spent between 0 and \$0.5 million CAD on research and development in 2017. The next largest category was \$1 to \$5 million with 27% of respondents, and \$0.5 to \$1 million, with 19% of respondents. Responses dropped off above the \$5 million mark, with a combined 15% of companies reporting R&D spending above \$5 million in 2017.

#### What did/do you expect your company to spend on research and development in the following years?

Looking ahead to 2018 and 2021, there was an increase in companies' expected R&D spending. In both 2018 and 2021, the largest category of R&D spending was \$1 to \$5 million, with 30% of companies reporting in that category for 2018 and 24% in 2021. The proportion of companies expecting to spend greater than \$5 million on R&D grew from 16% in 2017 to 23% in 2018, and 50% in 2021.







### Product development stage – General

**Quantify the number of products and/or technologies you have in each phase?**

Development stage	Number of companies <sup>2</sup>
Research and development	161 (77%)
Early clinical trials or product demonstration	102 (49%)
Late clinical trials or regulatory approval	61 (29%)
Marketed product	62 (30%)

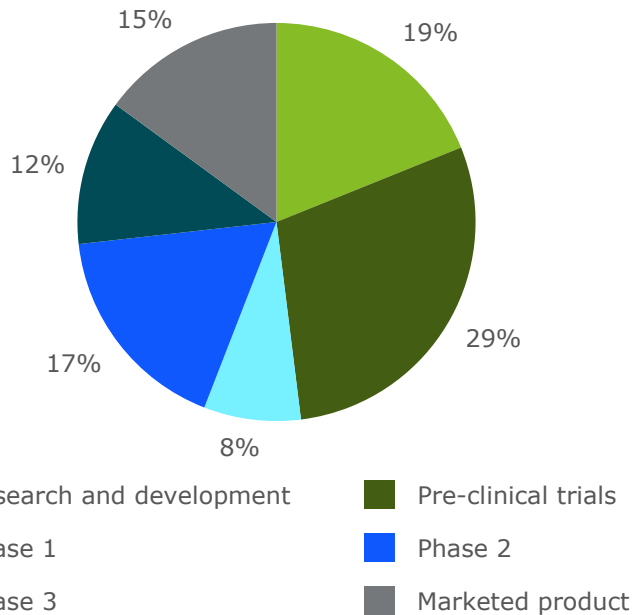
The largest number of respondents (77%) identified having a product in the research and development stage, followed by 49% with a product in early clinical trials, 30% with a marketed product, and 29% with a product in late clinical trials or awaiting regulatory approval.

<sup>2</sup> This question requested the total number of products respondents had in each stage, but for clarity, the figures provided are the count of respondents (i.e. total number of companies) with at least one product in that stage

**Health biotechnology product**

**For your health biotechnology product, which phase of development is your lead product?**

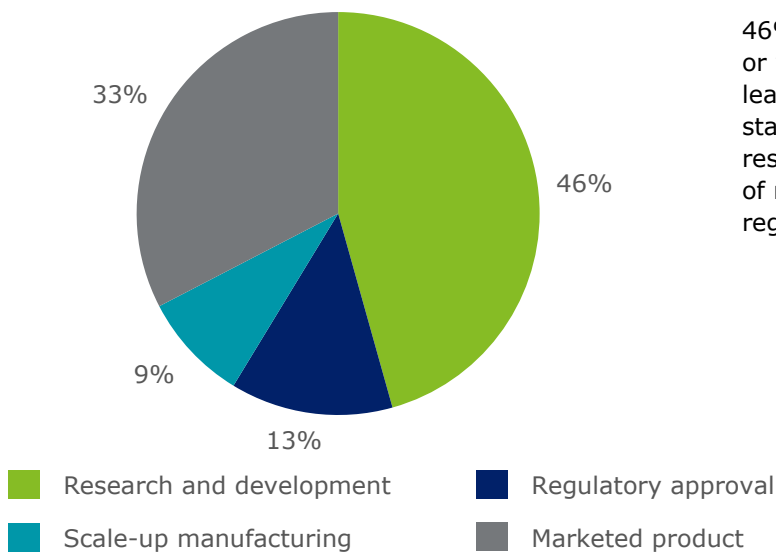
The largest proportion of health biotechnology companies had lead products in either pre-clinical trials (29%) or research and development (19%) phases. The next largest proportion of companies (17%) had their lead product in Phase 2 clinical trials. On the fully mature end, 15% of companies had a marketed product.



**Agriculture and/or veterinary biotechnology**

**For your agriculture and/or veterinary biotechnology product, which phase of development is your lead product?**

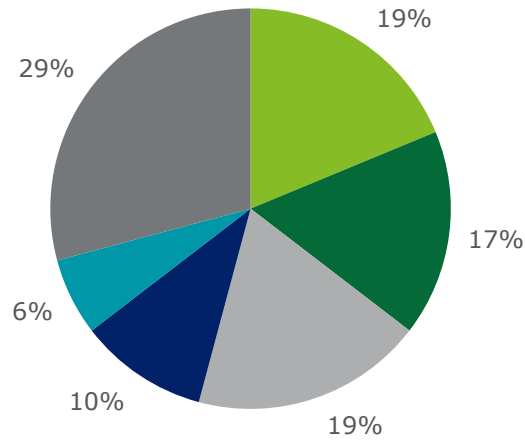
46% of survey respondents with an agriculture or veterinary biotechnology product had their lead product in the research and development stage. This was followed in second by 33% of respondents with a marketed product, and 13% of respondents with a product awaiting regulatory approval.



**Medical technology product**

**For your medical technology product, which phase of development is your lead product?**

29% of respondents with a medical technology product had their lead product on the market. The second largest proportion of companies had products in the research and development stage (19%), and product demonstration or prototype stage (19%).

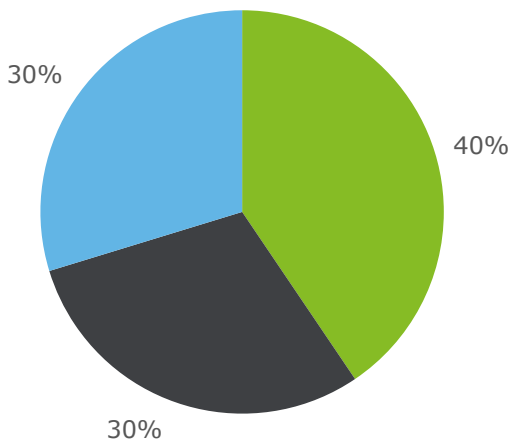


- Research and development
- Product engineering
- Product demonstration or prototype
- Regulatory approval
- Scale-up manufacturing
- Marketed product

**Industrial biotechnology product**

**For your industrial biotechnology products, which phase of development is your lead product?**

The largest proportion of industrial biotechnology respondents (40%) had their lead product in research and development. Tied for the second largest were companies with a pilot or demonstration plant, and companies with a full-scale plant, with 30% each.

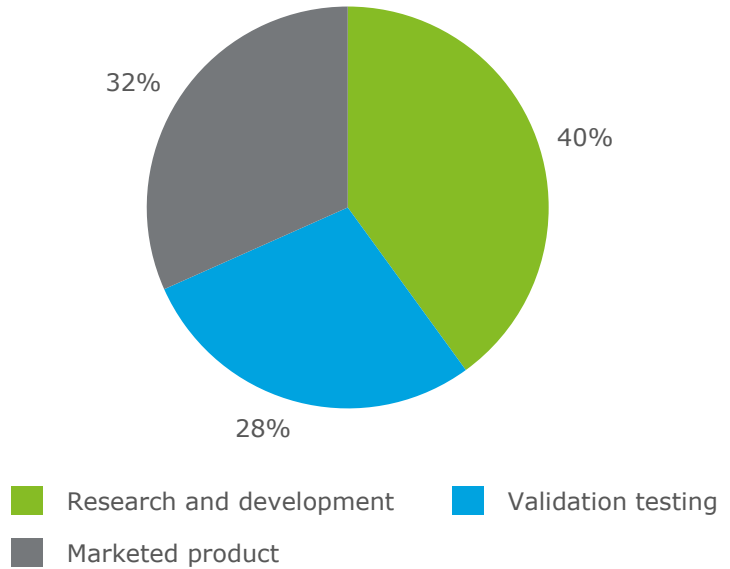


- Research and development
- Pilot or demonstration plant
- Full-scale plant

**Diagnostics product**

**For your diagnostics product, which phase of development is your lead product?**

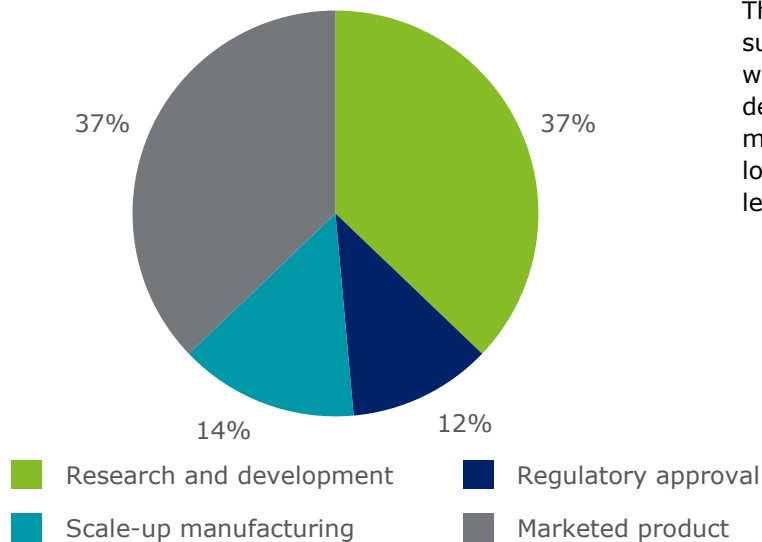
40% of respondents with a diagnostic product had their lead product in research and development. This compares to 32% of companies that had a marketed product, and 28% that had their lead product in validation testing.



**Functional food and natural health product**

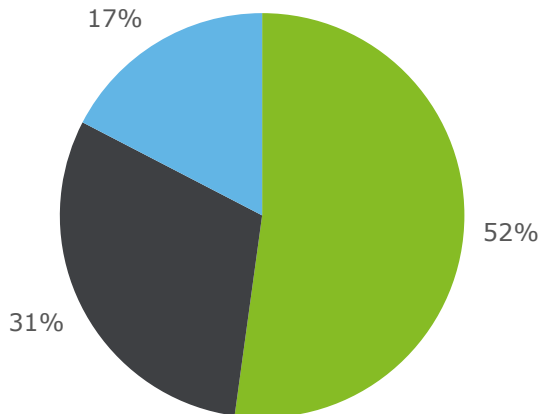
**For your natural health or functional food products, which phase of development is your lead product?**

The natural health and functional food products sub sector had an equal 37% of respondents with their lead product in research and development and a marketed product. Scale-up manufacturing was third with 14%, while the lowest number of respondents (12%) had their lead product awaiting regulatory approval.



**Environmental biotech product**

**For your environmental biotech products, which phase of development is your lead product?**



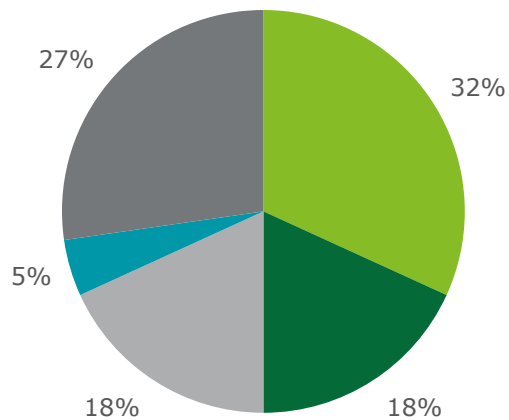
A majority (52%) of environmental biotechnology companies had their lead product in research and development. 31% of companies had a product at the pilot or demonstration plant stage, while 17% of companies had products in development at full-scale plants.

- Research and development
- Pilot or demonstration plant
- Full-scale plant

**Healthcare IT product**

**For your healthcare IT products, which phase of development is your lead product?**

The largest proportion of companies (32%) with healthcare IT products had their lead product in the research and development stage. The second highest proportion (27%) of companies had a commercialized product on the market. Tied for third were companies with lead products in the engineering and demonstration stages, with 18% of respondents each.



- Research and development
- Product engineering
- Product demonstration or prototype
- Scale-up manufacturing
- Marketed product

## 2. Talent and jobs

### Average number employed 2017, 2018, 2021

**What was/do you expect to be the average number of people employed at your company in the following years?**

	2017	2018	2021
Average	30	35	54
Median	8.5	11	20
<b># of employees</b>	<b>% of respondents</b>		
0 to 9	53%	46%	20%
10 to 24	27%	25%	36%
25 to 99	15%	23%	35%
100+	5%	6%	11%
No response (count)	2	3	8

The sector is currently represented by small and medium-sized companies that are expecting to create new high paying jobs over the coming five years. A majority of the surveyed companies (53%) employed 0-9 people, and the median employment was 8.5. Looking forward, median company employment is projected to grow to 11 in 2018 and to 20 by 2021. In particular, the number of companies with 25 or more employees is expected to increase from 20% in 2017 to 45% in 2021, an increase of 25 percentage points.

Deloitte compared the results of the Survey to employment statistics issued by Statistics Canada for the industry. In terms of industry classification,

the professional, scientific, and technical services industry ("PST")<sup>3</sup> is being used for comparison as it comprises companies that are most closely aligned with the biotechnology sector, including establishments engaged in conducting research and experimental development in physical, engineering and life sciences.<sup>4</sup> Therefore, for the purposes of our analysis, the PST industry is used as the aggregate industry comparator for the biotechnology cluster. Accordingly, the employment within the professional, scientific, and technical services industry is growing. Between 2012 and 2017, this industry reported a compounded annual growth rate ("CAGR") of 4%.<sup>5</sup>

<sup>3</sup> This is based on the North American Industry Classification System ("NAICS") 54 (professional, scientific, and technical services), and more specifically 5417 (scientific research and development services). This industry category comprises establishments primarily engaged in conducting original investigation, undertaken on a systematic basis to gain new knowledge (research), and in the application of research findings or other scientific knowledge for the creation of new or significantly improved products or processes (experimental development). The industries within this industry group are defined on the basis of the domain of research; that is, on the scientific expertise of the establishment.

<sup>4</sup> Most of the surveyed companies indicate that their services fall within the health biotechnology (56%) and R&D services (25%) subsectors, which are largely represented in the companies classified under NAICS 54 - professional, scientific, and technical services), and more specifically NAICS 5417 - scientific research and development services.

<sup>5</sup> Statistics Canada. Table 282-0012 - Labour Force Survey estimates ("LFS"), employment by class of worker, North American Industry Classification System ('NAICS') and sex.

Also noteworthy is the proportion of total employment provided by large companies in the sector.<sup>6</sup> In 2017, only 5% of the companies reported more than 100 employees; however, these companies contributed to over 50% of total employment within the sector.

This is aligned with the 2017 Canadian Life Sciences Trend Analysis report, which finds that 86% of the Canadian biotechnology companies are small and medium sized enterprises.<sup>7</sup>

### Employee education

#### Approximately how many people do you employ with each of the following highest degrees?

	Number of companies with at least one employee with degree	Total number of staff
<b>PhD</b>	183	1,059
<b>Master's degree</b>	165	953
<b>Bachelor's degree</b>	155	2,413
<b>Post-secondary diploma</b>	92	851
<b>High school diploma</b>	68	1,650

The biotechnology sector is a highly specialized field and thus, many occupational functions require a university degree. Within the life sciences sector, occupations in marketing, sales, communications, quality assurance, research and development, and regulatory affairs generally require a university degree.<sup>8</sup> Furthermore, many occupations involving preclinical research, clinical research, and research development often require a post-graduate degree.<sup>9</sup> According to the Survey, many biotechnology companies have employees with higher education qualifications, with 75% of companies indicating having employees with a bachelor's degree, 79% indicating having employees with Master's degrees, and 88% of companies indicating having employees with a PhD.



<sup>6</sup> Based on Statistics Canada definition of establishments by employment size categories:

- Micro 1-4 employees
- Small 5-99 employees
- Medium 100-499 employees
- Large 500 + employees

<sup>7</sup> Biotechgate. Canadian Life Sciences Trend Analysis 2017.

<sup>8</sup> BioTalent Canada. Sequencing the Data: People – Driving Canada's Bio-economy. Labour market information report 2013.

<sup>9</sup> Ibid.

## Hiring

### Which of the following executive positions are/have been the most challenging to fill?

#### Number of respondents selecting each position<sup>10</sup>

Clinical and Medical Development	42 (24%)
Business Development	40 (22%)
Regulatory Affairs	36 (20%)
Chief Financial Officer	28 (16%)
Chief Executive Officer	27 (15%)
Sales	24 (13%)
Other	21 (12%)
Chief Scientific Officer	20 (11%)
Manufacturing	20 (11%)
Engineering	14 (8%)
No response	30

As companies in the sector grow, attracting global executive talent is a priority. Respondents identified clinical and medical development, business development, and regulatory affairs executives as the most challenging positions to fill. Conversely, only 8% of the companies identify having challenges with filling the engineering executive roles. Difficulty hiring is not a new issue in the biotechnology industry. In 2008, 34% of companies reported staff shortages, and this proportion only fell slightly to 33% in 2017.<sup>11</sup>

<sup>10</sup> Survey respondents were allowed to select their top two choices.

<sup>11</sup> BioTalent Canada. Sequencing the Data: People – Driving Canada’s Bio-economy. Labour market Information report 2013.



### 3. Expenditures and revenue

#### Estimated revenue 2017, 2018, 2021

What were/are your estimated revenues in the following fiscal years?\*

\$ million CAD	Count of respondents		
	2017	2018	2021
0 to 0.5	114 (59%)	79 (41%)	29 (15%)
0.5 to 1	18 (9%)	31 (16%)	12 (6%)
1 to 5	35 (18%)	50 (26%)	40 (21%)
5 to 10	8 (4%)	10 (5%)	33 (17%)
10 to 20	4 (2%)	8 (4%)	27 (14%)
20 to 50	5 (3%)	6 (3%)	19 (10%)
50 to 100	6 (3%)	6 (3%)	14 (7%)
Above 100	2 (1%)	3 (2%)	15 (8%)
No response	16	15	19

The Canadian biotechnology industry has high expectations for revenue growth over the next five years. In 2017, the majority of companies (59%) reported annual revenues of up to \$500,000 with only 13% reporting revenues above \$5 million. The reported revenues are in line with the industry average<sup>12</sup> at about \$565,000.<sup>13</sup> The revenues of the majority of companies are expected to increase

over the coming years from 2018 to 2021, with 59% of the companies expected to report revenues of over \$500,000 annually in 2018 and 85% in 2021. This result contributes to the story of an industry composed of many early-stage companies that are investing in product development today and have high expectations for commercial success in the next five years.

<sup>12</sup> This is based on the 2016 Statistics Canada small business profiles revenue for the scientific research and development services industry companies.

<sup>13</sup> Statistics Canada. Small business profiles, 2016.

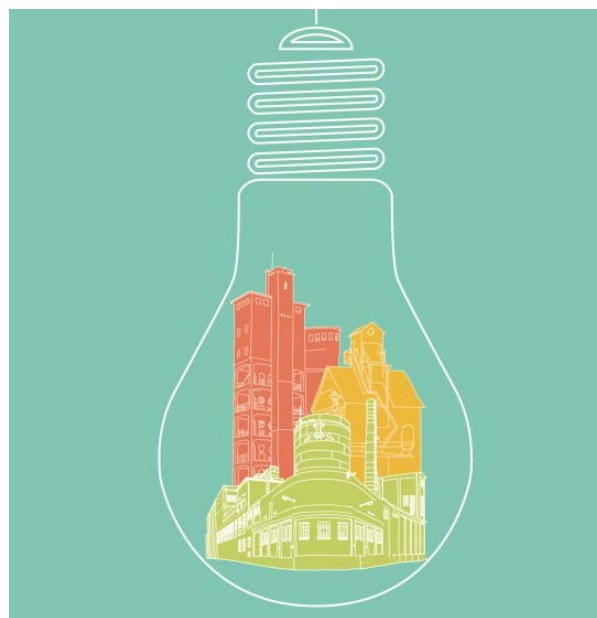
**Operating expenditures 2017, 2018, 2021**

**What were/are your estimated operating expenditures in the following fiscal years?**

\$ million CAD	Count of respondents		
	2017	2018	2021
0 to 0.5	45 (23%)	24 (13%)	7 (4%)
0.5 to 1	44 (23%)	34 (18%)	17 (9%)
1 to 5	61 (32%)	84 (44%)	50 (27%)
5 to 10	18 (9%)	20 (10%)	44 (23%)
10 to 20	8 (4%)	12 (6%)	24 (13%)
20 to 50	10 (5%)	10 (5%)	31 (16%)
50 to 100	4 (2%)	6 (3%)	9 (5%)
Above 100	2 (1%)	2 (1%)	6 (3%)
No response	16	16	20

In 2017, almost half (46%) of the respondents reported up to \$1 million in operating expenses. In 2018, this number drops to approximately 30% of the companies, while the number expecting to spend between \$1 and \$5 million in operating expenditures grows from 32% to 44%. Looking five years ahead, annual operating expenditures are expected to grow substantially by 2021 with 61% of the companies expecting to incur over \$5 million in annual operating expenditures.

It is worth noting that the Survey’s reported operational expenditures in 2017 are comparable to the industry average. According to the 2016 Statistics Canada small business profiles, on average a company in the scientific research and development services industry incurs approximately \$773,000<sup>14</sup> in operating expenses.



<sup>14</sup> Statistics Canada. Small business profiles, 2016.

### Industry economic performance

Economic indicator	2014	2015	2016	2017
GDP (NAICS 54) <sup>15</sup> (millions)	\$83,879	\$86,191	\$90,629	\$91,950
Employment (NAICS 54) <sup>16</sup> (thousands)	888	913	951	989
Business Counts (NAICS 54) <sup>17</sup>	284,358	293,135	297,389	305,022

The two measures commonly used to measure the impact of an industry in the economy are Gross domestic product ("GDP"), which measures the total economic value-add of goods and services produced within the economy, and the "multiplier effect," which measures the impact on other industries from an increase in economic activity<sup>18</sup> by a specific industry.

In general, the growth in professional, scientific and technical services industry is indicated by the growth in GDP, employment and business counts. GDP as measured by expenditure shows that the projected increase by the biotechnology companies surveyed is aligned with the growth in the professional, scientific and technical services industry. Between 2014 and 2017, the professional, scientific and technical services industry GDP grew at a CAGR of 2%.<sup>19</sup> According to the Conference Board of Canada, the industry is expected to continue to grow at a CAGR of 2% into 2022.<sup>20</sup>

Economic activity is generated through spending. The impact of spending by the biotechnology companies is expected to go beyond the

biotechnology sector, contributing to other industries in the supply value chain. Expenses incurred by the biotechnology sector can be characterized by the inputs required in production; the spending circulates through the suppliers of this sector, the suppliers of the suppliers, and the broader economy and generates additional economic activity and value add.

According to Statistics Canada, the largest supply chain sectors of the professional, scientific, and technical services industry include manufacturing, finance, insurance, real estate, rental and leasing and holding companies as well as administrative support, waste management and remediation services industries.<sup>21</sup> Growth in the biotechnology sector contributes to consequent growth in the supplier industries and the broader economy.

Statistics Canada data indicates that the professional, scientific, and technical services industry has a total GDP multiplier of 1.21. This indicates that for every dollar spent in Canada, the industry generates an estimated \$1.21 in value add to the economy.<sup>22</sup>

<sup>15</sup> Statistics Canada. CANSIM 379-0031

<sup>16</sup> Statistics Canada. CANSIM 282-0088

<sup>17</sup> Statistics Canada. CANSIM 553,0001;553-0003; 553-0005;553-0007

<sup>18</sup> Economic activity is defined as the total amount of unduplicated spending by companies within the sector, usually incurred towards production of goods and services.

<sup>19</sup> Statistics Canada. CANSIM 379-0031

<sup>20</sup> Conference Board of Canada. Canadian outlook Long-term economic Forecast, 2018

<sup>21</sup> Statistics Canada. National Symmetric IO Table – S Level, 2013

<sup>22</sup> Statistics Canada. Input-output national multipliers, 2013

## 4. Finance and partnerships

### Investment capital raised, 2017, 2018, 2021

How much investment capital did you raise/expect to raise in the following fiscal years?

\$ million CAD	Count of respondents		
	2017	2018	2021
0 to 0.5	100 (55%)	65 (36%)	51 (29%)
0.5 to 1	20 (11%)	11 (6%)	10 (6%)
1 to 5	30 (16%)	41 (23%)	24 (14%)
5 to 10	11 (6%)	21 (12%)	14 (8%)
10 to 20	8 (4%)	19 (10%)	24 (14%)
20 to 50	6 (3%)	16 (9%)	28 (16%)
50 to 100	4 (2%)	4 (2%)	15 (9%)
Above 100	4 (2%)	4 (2%)	8 (5%)
No response	25	27	34

Canadian biotechnology companies are looking to increase the amount of capital raised in coming years. In 2017, a majority of respondents (66%) raised less than \$1 million in financing, while 12% of reporting companies raised over \$10 million. By 2021, a total of 43% respondents expect to raise more than \$10 million, a considerable 31 percentage point increase from 2017. By comparison, the number of companies expecting to raise less than \$1 million in 2021 decreases by 31 percentage points to 35%.

## Sources of capital

### For the capital raised in 2017, which sources did you use?

#### Number of respondents accessing each capital source

Government-facilitated programs	72 (45%)
Founder equity	47 (29%)
Angel investors	41 (26%)
Public financing	26 (16%)
Institutional pharma	26 (16%)
Debt	25 (16%)
Family and friends	21 (13%)
Venture capital	20 (13%)
Acquisitions and divestitures	0 (0%)
Other	10 (6%)
No response	48

### Going forward, which sources do you intend to pursue to raise capital?

#### Number of respondents accessing each capital source

Government-facilitated programs	103 (59%)
Institutional pharma	89 (51%)
Venture capital	72 (41%)
Public financing	53 (30%)
Angel investors	34 (20%)
Debt	28 (16%)
Acquisitions and divestitures	26 (15%)
Founder equity	23 (13%)
Family and friends	12 (7%)
Other	12 (7%)
No response	34

Government programs are the most commonly accessed source of capital by Canadian biotechnology companies. In 2017, 45% of Survey respondents used government programs to raise capital, a number that increases to 59% looking to the future. In 2017, founder equity (29%) and angel investors (26%) were the second and third most frequent sources of capital. Looking forward, the sources of capital which the second and third highest proportion of companies expect to access are institutional pharma (51%) and venture capital (41%). This result corroborates the picture of a sector comprised today of many early-stage companies that are bullish on their future growth, and desire greater access to capital to help facilitate their development.

**Going forward, which sources do you intend to pursue to raise capital?**

**Top three future sources of capital by 2018 development phase**

	<b>Discovery phase</b>	<b>Emerging phase</b>	<b>Growth phase</b>	<b>Maturity phase</b>
<b>#1</b>	Government-facilitated programs (53%)	Institutional pharma (56%)	Government-facilitated programs (59%)	Government-facilitated programs (19%)
<b>#2</b>	Angel investors (35%)	Government-facilitated programs (51%)	Institutional pharma (37%)	Founder equity (19%)
<b>#3</b>	Institutional pharma (29%)	Venture capital (50%)	Debt (28%)	Institutional pharma (19%)

Across all development stages, government-facilitated programs and institutional pharma were within the top three future sources of capital for survey respondents. Angel investors (35%) ranked second in the discovery phase, venture capital (50%) third in the emerging phase, and debt financing (28%) third in the growth phase. With regard to government programs, over 50% of

respondents in the discovery through growth phases looked to government as a source of capital in the future. By the maturity phase, however, this number drops to 19%. This result signals the importance of government support in incubating early-stage growth, and that once mature, biotechnology companies are less in need of public funding.

## 5. Issues facing the industry

### In your view, what are the most impactful issues currently facing the industry?

#### Number of respondents identifying the following as issues

Access to capital	116 (57%)
Recruitment and retention of top talent	66 (32%)
Regulatory challenges	64 (31%)
Ability to scale-up	48 (23%)
Access to new markets	33 (16%)
Canadian tax competitiveness	23 (11%)
Other	9 (4%)
No response	2

The top issue facing the biotechnology industry is access to capital, as identified by a majority of Survey respondents (57%). This result is aligned with previous surveys of the sector both nationally<sup>23</sup> and provincially<sup>24</sup> which also found access to capital as the top issue for companies. Canada traditionally has not had a strong financing market with only one specialty investment bank and a handful of dedicated venture capital funds based in Canada. In addition to impeding growth, access to capital is an issue because Canadian companies are under continuous pressure to relocate to the United States from American financiers. To quantify the capital gap in the life sciences, by Q3 of 2017, Canadian companies in the sector raised \$554 million CAD in VC financing.<sup>25</sup> In comparison, in the same period American life sciences companies raised \$12.1 billion USD.<sup>26</sup> In per capita terms, this is approximately \$37 USD in the USA and \$12 USD<sup>27</sup> in Canada, a gap of over 300%.

<sup>23</sup> BIOTECanada. The missing ingredient. Canadian Life Sciences Industry Forecast 2013

<sup>24</sup> BIOAlberta. Life sciences in Alberta. State of the industry 2017

<sup>25</sup> Canadian Venture Capital Association. VC & PE Canadian Market Overview – YTD Q3 2017

<sup>26</sup> PitchBook & National Venture Capital Association. Venture Monitor – Q3 2017

<sup>27</sup> Calculated at an exchange rate of 1.30 CAD - 1 USD, and populations of 325 million (USA), and 36 million (Canada)



To enable continued growth of the sector and capitalize on the opportunities present today, policymakers can help improve industry access to capital and talent.

The second most impactful issue was recruitment and retention of top talent, as identified by 32% of respondents. This issue is important because it may compound with and be one of the causes of capital access issues in Canada. One of the most important factors investors look for is a strong and experienced executive team. With issues recruiting key executive positions, Canadian companies cannot only have difficulty managing a growing operational footprint, but also in accessing the capital they need to fund it.

Combined, these issues are especially pertinent in context of the sector's outlook for growth over the next five years and (generally) early development stage.



## 6. Government support

### Which government supported initiatives have you used?

#### Number of respondents accessing the following supports

Scientific Research and Experimental Development (SR&ED) Program	150 (80%)
Industrial Research Assistance Program (IRAP)	121 (65%)
Provincially funded programs	69 (37%)
Other	35 (19%)
Canadian Institutes of Health Research (CIHR)	25 (13%)
Sustainable Development Technology Canada (SDTC)	7 (4%)
International Science and Technology Partnerships Canada Program (ISTPP)	2 (1%)
Climate Change Emission Management Corporation	2 (1%)
BioCanada Medical Product Development Program (MPDP)	1 (0.5%)
Bioenergy Producer Credit Program	1 (0.5%)
No response	21

### What are the biggest challenges with government programs?

#### Number of respondents accessing the following supports

Application barriers (timelines, difficulty, effort etc.)	115 (61%)
Funding package size	69 (37%)
Availability (#) of funding mechanisms	69 (37%)
Program continuity	28 (15%)
Communication and promotion	16 (9%)
Other	13 (7%)
No response	21

Government programs play a vital role in securing product development and commercial success. The most accessed program was the Scientific Research & Experimental Development Program (SR&ED), with 80% of respondents identifying having benefitted from it. The Industrial Research Assistance Program (IRAP) was second with 65% of respondents, and provincially funded programs were third with 37%.

A majority of respondents (61%) identified application barriers including difficulty and work effort required as the biggest challenge with accessing government programs. Given the importance of government programs in supporting the sector's growth trajectory, streamlining application processes may have a significant impact on sector performance at little to no public cost. Tied as the second biggest issue with accessing government programs was funding package size and availability of funding programs, which each having 37% of respondents.

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# Need more information?

## **BIOTECCanada**

BIOTECCanada is the national industry association with over 200 members located nation-wide, reflecting the diverse nature of Canada's health, industrial and agricultural biotechnology sectors. In addition to providing significant health benefits for Canadians, the biotechnology industry has quickly become an essential part of the transformation of many traditional cornerstones of the Canadian economy including manufacturing, automotive, energy, aerospace and forestry industries.

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# Thank you.

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