



Building skills for Canada's bio-economy

RESEARCH BRIEF

The Talent Differential

The case for work-integrated learning
in the bio-economy



Work-integrated learning opportunities

Work-integrated learning (WIL) such as co-op, work placements, internships, and clinical placements that combine practical work experience with formal classroom learning are a key component of many Canadian post-secondary education models. BioTalent Canada’s **Student Work Placement Program** (SWPP) for health and bioscience is one such program.

According to Statistics Canada (StatsCan), 50% of post-secondary graduates in 2015 participated in WIL.¹ Participation rates decline as education levels increase, and vary substantially based on field of study. (See Fig. 1)

Some of the lowest participation rates are in “physical and life sciences and technologies”—a key supplier of workers for the Canadian bio-economy.² Note: These numbers don’t speak to the success of SWPP as they are from two years before the launch of the program.

WIL as a bio-economy recruitment tool

As a part of its 2020 labour market information (LMI) study—the full results of which will be published in 2021—BioTalent Canada conducted a survey of Canadian bio-economy employers. Respondents cited WIL opportunities as a key source of talent recruitment. This sentiment was echoed during a series of roundtables with Canadian bio-economy stakeholders who identified placements as a good opportunity for employers and students to assess fit between one another. (See Fig. 2)

Take a look at BioTalent Canada’s **Student Work Placement Program At-A-Glance** for a more granular look at the data supporting the concept of WIL as a recruitment tool.

WIL is a symbiotic relationship between students and employers

Results from the SWPP post-participation surveys in 2019-20 demonstrated that WIL opportunities are highly advantageous to both student and employer. The survey showed that students were highly satisfied with the program and employers felt the students made significant contributions.

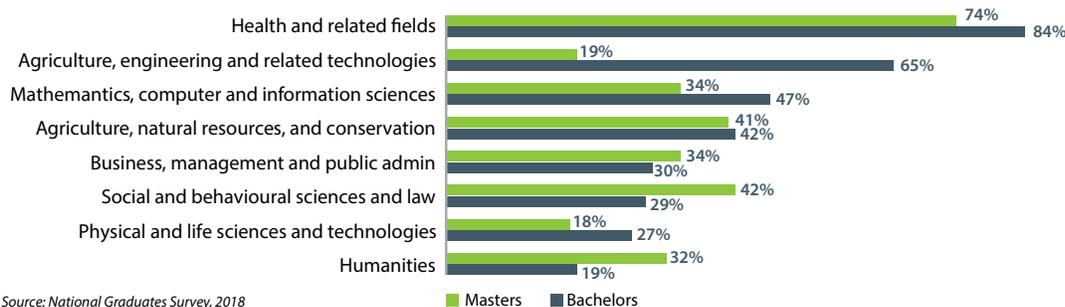
- 95% student satisfaction as it relates to the assigned job activities and work assigned.
- 99% of employer satisfaction with student performance.
- 100% of employers would participate again.

FIGURE 2
Top recruiting sources for Canadian bio-economy employers



Source: Survey of Canadian Bio-economy Employers 2020 (n=573)

FIGURE 1
Participation rates in WIL by field of study and level



Source: National Graduates Survey, 2018

1 Galarneau, Kinack & Marshall (2020). *Work-integrated learning during postsecondary studies, 2015 graduates*. Statistics Canada: Insights on Canadian Society. Catalogue no. 75-006-X ISSN 2291-0840

2 Ibid.

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During these trying times, when the pandemic has been so disruptive to our industry, it has been essential for us to have the assistance of the co-op placement, as well as the financial support to focus on supporting industry initiatives.

– Shana Cristoferi, BioNova (Halifax, NS)

Easing transitions from school to work

A student that secures a work placement related to their field of study is more likely to transition from school to work successfully.³

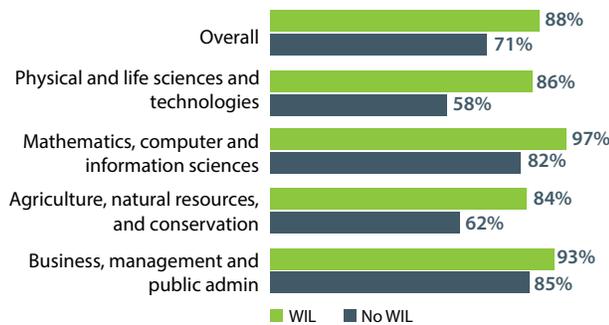
StatsCan’s 2018 National Graduate Survey indicates that overall transition outcomes for those who participated in WIL are significantly better compared to graduates who did not. This is particularly true for those graduating from bachelor’s programs. (See Fig. 3)

Three years after graduating, WIL participants from bachelor’s programs were:

- more likely to be working in a job related to their studies (88% vs 71%),
- less likely to perceive themselves as overqualified for their current job (32% vs. 49%), and
- earning higher annual salaries (on average 7% higher).⁴

These patterns are consistent in many of the bio-economy-related fields of study, particularly for the “physical and life sciences and technologies.”⁵ The 2019-20 SWPP survey validates these findings. Ninety-seven percent (97%) of respondents indicated that they feel better positioned to secure meaningful employment in their field of study because of a WIL opportunity.

FIGURE 3
Current job related to field of study by WIL participation
(Bachelors; 3-years post-graduation)



Source: Survey of Canadian Bio-economy Employers 2020 (n=573)

BioTalent Canada is launching a series of essential and technical skills courses that will further improve a student’s chance of success transitioning to a career.

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Since we are still a very small company we do not have resources to hire students... through this [WIL] program the student was trained and in the near future will become a full-time employee at our company.

– Bogumil Karas, CEO, Designer Microbes (London, ON)

3 Martin & Rouleau (2020). *An exploration of work, learning and work-integrated learning in Canada using the Longitudinal and International Study of Adults*. Statistics Canada: Longitudinal and International Study of Adults Research Paper Series. Catalogue no. 89-648-X. ISSN 1927-0100

4 Galarneau, Kinack & Marshall (2020). *Work-integrated learning during postsecondary studies, 2015 graduates*. Statistics Canada: Insights on Canadian Society. Catalogue no. 75-006-X. ISSN 2291-0840

5 Note that “health and related” fields is a key area for the bio-economy. Nearly all programs require a WIL component so a WIL vs. No WIL analysis is not possible.

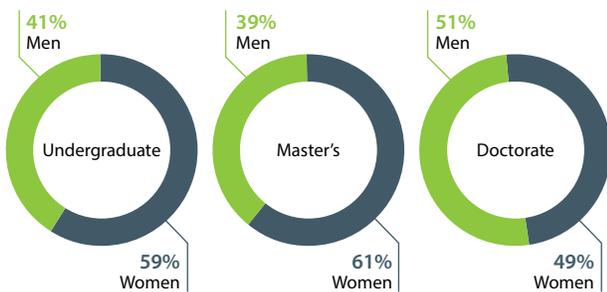
WIL opportunities and women

As part of BioTalent Canada’s 2020 LMI survey, it was discovered that women account for just 36.3% of the bio-economy workforce.

The low proportion of women in bio-economy management and C-suite positions is particularly confounding given the higher proportion of women than men studying STEM and health-related fields in Canada. (See Fig. 4)

Increasing the number of WIL opportunities could help close this gap. The WIL participation rate is significantly higher among women across all education levels according to the 2018 National Graduate Survey.⁶ (See Fig. 5) These numbers are supported by data from SWPP. Pre-COVID-19, women made up 56% of SWPP participants, in part because of added financial incentives for employers to offer WIL placements to women or other underrepresented groups.

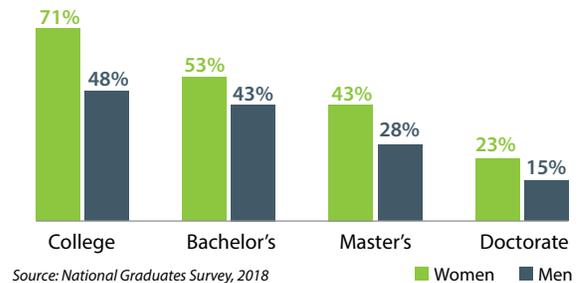
FIGURE 4
Student enrolment in bio-economy related university programs by gender (2016)



Source: Postsecondary Student Information System

The WIL participation rate is significantly higher among women across all education levels according to the 2018 National Graduate Survey.⁶

FIGURE 5
WIL participation rates by gender and level



Source: National Graduates Survey, 2018

Potential impacts of COVID-19 on WIL opportunities

StatsCan research indicates that there have been significant COVID-19 impacts on post-secondary students’ work placement.

Data was collected through crowdsourcing with more than 100,000 post-secondary students in April 2020⁷. Thirty-five percent (35%) of respondents reported that, because of COVID-19, their work placement was delayed or cancelled. Among the respondents from bio-economy-related fields of study, rates of cancellation or delay range from 30% in the sciences to 48% in healthcare.⁸

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While WIL opportunities have been on the decline during the pandemic, BioTalent Canada has seen an uptick in interest in SWPP. So much so, in fact, that the program was extended to include **healthcare** as a response to the needs of the industry. This was a logical expansion as it was recently determined that **some health-related programs** are also bio-economy-related.

6 Martin & Rouleau (2020). *An exploration of work, learning and work-integrated learning in Canada using the Longitudinal and International Study of Adults*. Statistics Canada: Longitudinal and International Study of Adults Research Paper Series. Catalogue no. 89-648-X. ISSN 1927-0100

7 This approach to data collection can not extrapolate the findings to the overall postsecondary student population in Canada, however, given the very large number of participants, the results can offer important insights.

8 Wall (2020). *COVID-19 pandemic: Impacts on the work placements of postsecondary students in Canada*. Statistics Canada: STATCAN COVID-19: Data Insights for a Better Canada. Catalogue no. 45280001

What does all this data mean?

These findings raise questions about how Canadian bio-economy organizations integrate WIL into their human resource strategies.

1. How can bio-economy employers be encouraged to collaborate with post-secondary institutions to further develop WIL opportunities?

Graduates from “physical and life sciences and technologies” are main sources of talent for bio-economy employers. Conversely, they also have the lowest participation rates in WIL. SWPP presents post-secondary students in these fields with an opportunity to gain valuable direct labour market experience at little cost to the employers.

2. How can WIL opportunities be leveraged to provide women with more successful transitions to the Canadian bio-economy workforce?

Women make up the majority of bio-economy-related students, yet account for just 36.3% of the Canadian bio-economy workforce. Simultaneously, women studying for careers in the bio-economy are more likely to participate in WIL compared to their male counterparts overall. There’s a disconnect somewhere.

3. Would it be beneficial to introduce more WIL opportunities at advanced degree levels to address these noted gaps?

As education levels increase; WIL participation decreases. There was general consensus among roundtable participants that new master’s and doctorate hires, despite exceptional technical abilities, often lack basic workplace proficiencies. Communication skills, problem solving, and project management can’t be taught in a lecture hall or a lab; they’re learned through on-the-job experience gained through WIL opportunities.

BioTalent Canada, in an effort to address these skills gaps, is developing an essential skills training program focused on reading, writing and numeracy for the bio-economy. This program will better prepare WIL participants for the transition to the workforce. Learn more at biotalent.ca/essential.

BioTalent Canada LMI Study next steps

These preliminary findings will serve as a basis for additional data sourcing throughout 2020 and 2021. The following areas are currently being explored based on these initial discoveries:

- Additional analysis about gender distribution within the bio-economy according to occupational groupings, and identification of barriers and challenges in addressing the current gender gap,
- Understanding the various approaches used by employers, and learning institutions, to address knowledge and skills gaps among students, graduates, new entrants and established workers, and

- Assessment of the bio-economy labour market by ascertaining the gap(s) between current and projected demand and supply.

BioTalent Canada will release research briefs throughout the course of 2020 and 2021. Visit our repository at biotalent.ca/reports to read previously released briefs from this LMI study, including *Amplifying Success*.



Questions or want to participate?

Contact BioTalent Canada Project Manager **Adriana Saenz** (asaenz@biotalent.ca) if you have any questions or would like to offer your expertise to this or any future LMI study.

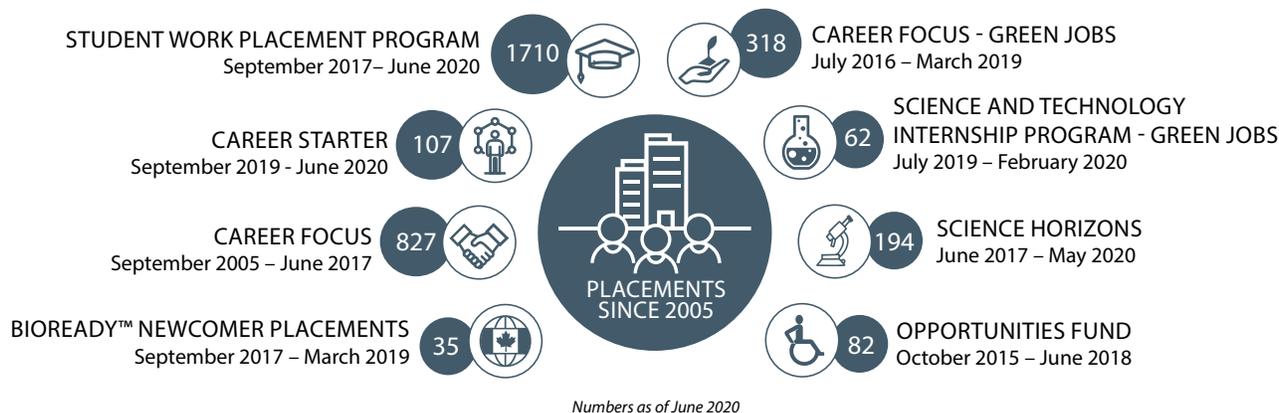
Methods and Sources: This research brief is based on findings from:

1. A series of three facilitated roundtable discussions held in late 2019 with a cross-section of 119 stakeholders from the Canadian bio-economy.
2. A survey of 573 bio-economy employers.
3. An analysis of data from BioTalent Canada's bio-economy wage subsidy programs.

Funded by the Government of Canada's Sectoral Initiatives Program. 

Overview of BioTalent Canada's Wage Subsidy Programs

BioTalent Canada wage subsidy programs provide bio-economy employers with financial to reduce the risk of hiring talent. Since before 2005, BioTalent Canada wage subsidy programs have placed more than 2,500 people in the Canadian bio-economy, the majority of which have come via the Student Work Placement Program.



About BioTalent Canada

BioTalent Canada™ is the HR partner of and catalyst for growth in Canada's bio-economy. Our engagement with employers, associations, post-secondary institutions, immigrant serving agencies and service providers has built a dynamic network that is strengthening skills, connecting job-ready talent to industry and creating opportunities. Recently awarded a Great Place to Work® Certification, BioTalent Canada practices the same industry standards they recommend to their stakeholders. For more information visit biotalent.ca.

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