

Minister of Innovation,  
Science and Industry



Ministre de l'Innovation,  
des Sciences et de l'Industrie

Ottawa, Canada K1A 0H5

The Honourable Kirsty Duncan, P.C., M.P.  
Chair  
Standing Committee on Science and Research  
House of Commons  
Ottawa, Ontario K1A 0G6

Dear Colleague:

Pursuant to Standing Order 108(2) of the House of Commons, I am pleased to submit on behalf of the Government of Canada (the Government) the response to the second report by the Standing Committee on Science and Research (the Committee) entitled *Top Talent, Research and Innovation*, which was presented to the House of Commons in October 2022.

The Government values the critical role Canada's talent plays in producing the knowledge, discoveries, and innovations that help build a strong future for Canadians. Around the world, it has become apparent that an abundance of highly skilled talent contributes to national prosperity. These benefits have created a well-documented, global competition for talent. Canada's abundance of trained talent drives Canadian innovation, and gives Canada a key competitive advantage. As a result, Canada is well positioned to weather the anticipated global economic slowdown and thrive in the years ahead. However, there continues to be a need to grow, attract and retain talent if Canada is to remain competitive and adapt to future challenges and opportunities.

The Government would like to thank the members of the Committee for their comprehensive work in undertaking this study, preparing the report, and delivering these recommendations. The Government also appreciates the time and contributions provided by the numerous witnesses who offered expert testimony, and is grateful to the many organizations that submitted written briefs to share their advice, expertise and insights with the Committee on this important topic.

The Government Response is a collaboration between Innovation, Science and Economic Development Canada, Immigration, Refugees and Citizenship Canada (IRCC), Finance Canada, Employment and Social Development Canada (ESDC), Health Canada and the granting agencies. The Government's response is grouped along 8 themes, aligned with the Committee's report: 1) Supporting

...2

international students and researchers; 2) Overall investment in research; 3) Scholarships, Fellowships, and Standard of Living for Students; 4) Employment opportunities for early-career researchers; 5) Ensuring diversity in the research ecosystem; 6) Supporting talent in the regions; 7) Colleges as centres of skills and innovation; and, 8) Strengthening experiential learning opportunities for students.

*Supporting International Students and Researchers (Recommendations 1 and 2)*

Canada is a leading destination for top students, researchers and scientists from across the globe. They are attracted by Canada's world-leading universities and colleges, our strong research support ecosystem, and the chance to make Canada their home. The Government agrees with the committee on the importance of a rapid and transparent system to attract international students and provide them with opportunities to stay in Canada. This is why the Government is undertaking a number of efforts in this area.

To study in Canada, applicants must first be accepted to a Canadian designated learning institution (DLI) before applying to IRCC for a study permit. Officers assess applications against eligibility criteria, including a letter of acceptance from a DLI, ability to support oneself while in Canada, and the intent to leave at the end of authorized stay. The admissibility of the applicant on health, criminality and security grounds is also assessed. All applications are assessed individually.

Application inventories for study permits and other types of applications have grown in recent years, due to increased application volumes, the impact of the pandemic on processing times and also as a result of IRCC shifting processing resources to support those affected by global crises. In response, the Government has committed new resources to processing, including the Economic and Fiscal Update 2021 (\$85 million) and Budget 2022 (\$385.7 million) for a total of \$420.7 million over five years, and \$86.5 million ongoing, for IRCC and partners (the Canada Border Services Agency and the Canadian Security Intelligence Service) to facilitate the timely and efficient entry of a growing number of visitors, workers, and students. IRCC has now hired over 1,200 new processing staff to increase capacity and reduce backlogs, mainly across all Temporary Residence lines of business. These new hires, as well as the implementation of technology-driven solutions funded by the \$85 million from the Economic and Fiscal Update 2021, have allowed IRCC to reduce wait times and return to pre-pandemic service standards for new Temporary Residence clients, including reductions in the study permit backlog from 187,000 at the end of July to 105,800 as of December 8, 2022. Processing times for Study Permits have also been reduced from 84 days in July to 64 days as of December 8. IRCC is on track to meet the ministerial commitment of new applications being processed within the service standard of 60 days by the end of the calendar year.

Furthermore, IRCC has made changes to integrate its processing network and enable caseloads to be shared between offices. IRCC will continue to focus on ways to modernize how it delivers programs and services. Recently, IRCC announced that it will publish monthly data to keep Canadians up to date on progress toward reducing backlogs. Internally, IRCC monitors its progress toward returning to normal service standards on a weekly basis.

IRCC has enacted several measures to increase transparency in decision-making by its officers. IRCC shares the application processing guidelines provided to officers with stakeholders and publishes them online for the general public. In addition, IRCC recently updated the study permit refusal letter to increase transparency by including more information on the reasons for refusals.

The International Student Program also provides a number of facilitations for students wishing to work during their studies as well as after they complete them. Federal and provincial/territorial economic immigration programs provide avenues to become permanent residents for many international students.

Under normal circumstances, full-time international students who are registered in an academic, vocational or professional training program are permitted to work an unlimited number of hours on campus and a maximum of 20 hours per week off-campus. In light of significant labour market shortages and calls to provide students with more flexible work opportunities, IRCC temporarily lifted the 20-hour limit on the number of hours international students can work off-campus. From November 15, 2022, until December 31, 2023, international students who are in Canada and who have off-campus work authorization are permitted to work an unlimited number of hours.

The Post-Graduation Work Permit Program (PGWPP) allows students who have graduated from eligible Canadian DLIs to obtain an open work permit to gain Canadian work experience and is available to the majority of international students. The PGWPP has grown significantly in recent years, providing access to work permits for over 370,000 post-graduation work permit (PGWP) holders in 2021, up from approximately 235,000 in 2019.

In order to ensure a smooth transition through the post-COVID period, the Minister of Immigration, Refugees and Citizenship announced an extension of COVID-19 facilitation measures for the PGWPP that had been due to expire August 31, 2022. From September 1, 2022, until August 31, 2023, 50% of credits earned from a PGWP-eligible DLI must be obtained from within Canada. Moreover, studies completed online from outside Canada will not be deducted from the length of a future PGWP as long as they comprise less than 50% of the program. These changes encourage international students to come to Canada while continuing to allow some flexibility for distance learning.

With respect to obtaining permanent residence in Canada, it is important to note that international students are transitioning to permanent residence in growing numbers. In 2021, over 157,000 international student graduates transitioned to permanent residence, an increase of nearly 400% since 2016. This increase is a result of the Government's commitment to creating pathways for immigration.

IRCC has prioritized the creation of a clearer pathway to permanent residence for international students, which is a key commitment in the Minister of IRCC's mandate letter. IRCC is in the early stages of this work, but a central component to any pathway will be to identify those students who are best placed to transition to permanent residence because they have skills, experience and language levels that will help them succeed in Canada's labour market. In addition, IRCC is exploring options to promote and facilitate meaningful work experience during studies (through co-op and work integrated learning) and post-graduation.

### *Overall Investment in Research (Recommendation 3)*

The Government recognizes the importance of investing in science and research to drive discoveries and innovative breakthroughs that generate social, health, and economic benefits for Canada and the world, in line with the committee's recommendation. The COVID-19 pandemic has particularly demonstrated the significant real-world benefits of investing in fundamental research. As Canada emerges from the COVID-19 pandemic, science and technology will continue to play a critical role in addressing society's most pressing challenges, such as climate change, green energy, sustainable growth, and lagging competitiveness.

The Government supports Canada's world-class research enterprise through the three federal research granting agencies—the Canadian Institutes of Health Research (CIHR), the Natural Sciences and Engineering Research Council (NSERC), and the Social Sciences and Humanities Research Council (SSHRC)—along with the Canada Foundation for Innovation (CFI). These organizations play a pivotal role in supporting research, training, and research infrastructure at Canada's post-secondary institutions. The roughly \$4 billion annual federal investment via these organizations feeds the pipeline of novel discoveries and highly qualified talent that underpin and drive innovation. These investments are complemented by a number of other research funding mechanisms and initiatives supported by the federal government, including support to a number of third-party science organizations.

In 2016, the Government launched the Fundamental Science Review to take stock of the steps required to preserve Canada's world-class standing and ensure that federal support for research is coherent, strategic, effective, and agile to keep pace with the dynamic nature of contemporary science. Led by an independent panel of distinguished research leaders and innovators, this was the first review of its kind in Canada in over 40 years. The panel's 2017 report *Investing in Canada's Future: Strengthening the Foundations of Canadian*

*Research* (the Naylor report) charted the course for unprecedented levels of investments in fundamental research, building on Budget 2016 which provided the largest investment in the base budgets of the granting agencies in more than a decade (\$95 million per year, ongoing).

In response to the Naylor report, Budget 2018 provided more than \$3 billion over five years through the federal research granting agencies, the CFI, and others to support the next generation of Canadian researchers and research institutes. This included the single largest investment in fundamental research in Canadian history of \$925 million over five years, and \$235 million per year ongoing. It also included increases to a number of tri-agency programs, such as the Canada Research Chairs (CRC) program and the College and Community Innovation Program (CCIP), as well as the creation of the new Tri-Agency New Frontiers in Research Fund to support international, interdisciplinary, fast-breaking, and high-risk research. Funding for CFI and for digital research infrastructure was provided to ensure that Canadian researchers have access to the tools they need to succeed.

The Government's investment approach recognizes the need to balance ongoing investments in fundamental research with targeted investments that advance the Government's priorities and respond to the challenges and opportunities facing Canada. Since March 2020, as the world continues to respond to the COVID-19 pandemic, the Government has made additional investments in science and research to strengthen Canada's capacity to respond to the current and potential future pandemics, to advance critical research priorities to build on the unique competitive advantages of the Canadian economy, and to ensure that Canada is well positioned to meet the demands of the next century. In Budget 2021, the Government invested over \$900 million in bio-innovation research, talent development, and research infrastructure as part of Canada's Biomanufacturing and Life Sciences Strategy, committed \$1.2 billion for pan-Canadian strategies on artificial intelligence, quantum science, and genomics, and invested over \$70 million in research funding in priority health areas such as mental health, diabetes, women's health, and pediatric cancer. In Budget 2022, the Government further invested in science across a range of themes, including research on the long-term effects of COVID-19, dementia, and brain health, and the development of technologies and crop varieties that will allow for net-zero emission agriculture.

To realize the full potential of the Government's investments, the federal research support system must be responsive to the evolving needs of the modern research enterprise. As research becomes increasingly complex, collaborative, and multi- and interdisciplinary, and as the need for science to inform the advancement of government policy objectives grows, the federal research support system requires cohesiveness—with strong, strategic coordination and collaboration across funders—and sufficient agility to respond to emerging challenges and capitalize on new opportunities.

That is why the Prime Minister mandated the Minister of Innovation, Science and Industry, in collaboration with the Minister of Health, to develop a plan to modernize the federal research support system to maximize the impact of investments in both research excellence and downstream innovation, with particular focus on the relationships among the granting agencies and the CFI. To support the development of this plan, the Government established the Advisory Panel on the Federal Research Support System in October 2022, to provide independent, expert advice to ministers. The Panel, composed of leaders in the science and research community, will review and recommend improvements to the structure, governance, and management of the federal research support system to better respond to government priorities and the needs of the modern research enterprise. The Panel is expected to provide its advice to the ministers in early 2023.

*Scholarships, Fellowships and Standard of Living for Students  
(Recommendations 4, 5, and 6)*

The Government values the critical role of the graduate students and trainees—Canada’s future researchers—in producing the knowledge, discoveries, and innovations that help build a strong future for Canada and the world. Graduate degree holders offer important contributions not only to the Canadian research ecosystem, but also to the public, private, and not-for-profit sectors. Nurturing and sustaining talent is integral to Canada’s research and innovation ecosystem.

The Government recognizes that federal scholarships and fellowships play a critical role in the career progression of Canada’s top talent, providing those who hold awards with increased financial security and independence along with greater control over their research direction. Budget 2019 provided \$114 million over five years with \$26.5 million per year ongoing, to the granting agencies to create 500 more master’s-level scholarship awards annually and 167 more three-year doctoral scholarship awards annually through the Canada Graduate Scholarship program. Budget 2019 also allocated \$37.4 million over five years and \$8.6 million per year ongoing, to the federal granting agencies to expand parental leave coverage from 6 months to 12 months for students and postdoctoral fellows who receive granting council funding. The investment has helped young researchers, especially women, better balance work obligations with family responsibilities, such as childcare.

Looking forward, to deliver an equitable, accessible, and effective suite of scholarships and fellowships that help support and prepare a diverse population of students and post-doctoral fellows for careers in research across all sectors of society, the Government, through the work of the Canada Research Coordinating Committee (CRCC), is developing a Tri-Agency Training Strategy. The Strategy aims to be trainee-centric, evidence-based, and transparent, while communicating a shared vision among the tri-agencies and upholding the principles of equity, diversity, and inclusion (EDI).

To continue promoting EDI and to tap into the country's full range of talent, Budget 2019 announced support for additional bursaries and scholarships for First Nations, Inuit, and Métis students through a \$9 million investment in Indspire—an Indigenous-led charitable organization that helps Indigenous students attend post-secondary institutions and find good jobs. In addition, in recognition that Black researchers are underrepresented in the awarding of grants, scholarships, and fellowships, Budget 2022 provided \$40.9 million over five years and \$9.7 million, ongoing, to the granting agencies to support targeted scholarships and fellowships for Black student researchers.

The Government also recognizes that graduate students and trainees are facing increasing financial hardships and that the rising cost of living, exacerbated by the COVID-19 pandemic, presents a significant barrier to pursuing graduate-level studies. Indeed, in the early days of the pandemic in 2020, many researchers lost access to research facilities and resources. To sustain the talent pipeline during that challenging time and reduce the impact on students, trainees, and research support personnel funded through research grants, the three granting agencies coordinated efforts to ease the financial burden for researchers and help safeguard Canada's next generation of research talent through income support for research trainees and research-related personnel.

With regard to international students, as noted above, the Government has already taken action to expand their ability to access employment opportunities by lifting restrictions on off-campus work hours for full-time international students until December 31, 2023.

The Government has heard the calls from the research community to increase the value of the scholarships and fellowships, and through the three federal granting agencies, it will continue to work with the research community to explore ways in which our next generation of researchers and top talent can be better supported.

The Government also values the opinions and feedback of students and postdoctoral fellows to inform the development and evolution of relevant programs and policies.

Each of the three granting agencies is governed by a Governing Council of up to 18 members. Members of the Governing Councils are appointed by the Governor in Council, and are drawn from the academic, public, and private sectors. The roles of the Governing Councils include advising the agency presidents on strategy, risk management, performance management, the broad allocation of resources, and stakeholder relations. In the past, Council membership has included Vice-Presidents, Academic and Deans of Graduate Studies from universities across Canada who bring their expert knowledge of student issues to Council discussions. The enabling acts of the three agencies would not prevent the Governor in Council from appointing trainees to the Councils.

The Governing Councils are not the only mechanisms for members of the research community to provide formal advice to the agencies. There are opportunities for students and postdoctoral fellows to provide input which informs the deliberations of each Council. For example, SSHRC has a subcommittee of Council, the Programs Committee, in which graduate students and postdoctoral fellows are eligible to nominate themselves for membership. NSERC has long had students and fellows on its Standing Committee on Discovery Research, while CIHR has had students appointed to the Institute Advisory Boards that provide advice on CIHR Institute-specific issues and initiatives.

The agencies also maintain an ongoing dialogue with various student groups and associations. Tri-Agency regional visits take place every fall with Scholarship Liaison Officers, and the Deans of Graduate Studies are also invited to attend. SSHRC, NSERC, and CIHR also maintain regular dialogue with the Canadian Association of Graduate Studies and the Canadian Association of Postdoctoral Scholars.

More recently, graduate students have been engaged in the tri-agency evaluation of talent programs at multiple levels and stages. Two national graduate student organizations were consulted during the design phase, while thirty-five graduate students participated in in-depth case studies. Over 75 graduate students provided feedback on the design of a student survey, and over 17,000 provided input via that survey.

*Employment Opportunities for Early Career Researchers  
(Recommendations 7, 8, and 9)*

Early career researchers (ECRs) represent a diverse new generation of curiosity-driven individuals, creative, team-spirited, socially minded champions of research who connect Canadian communities to people around the world. They inspire and drive some of Canada's most innovative, forward-looking research. By supporting ECRs, Canada unlocks new discoveries and strengthens its position as a world leader in research talent development.

The Government recognizes that many ECRs face barriers, such as challenges in establishing research credentials or having them recognized, securing research resources, or competing for limited numbers of research positions. That is why the granting agencies developed a Tri-Agency ECR Action Plan, under the leadership of the CRCC, to address the concerns of ECRs. Under the Plan, the agencies are supporting ECRs in a number of ways.

The federal research granting agencies and the CFI have implemented a common approach for reporting on ECRs' participation in flagship, investigator-initiated research programs to provide transparency and measure progress over time. In addition, they developed a common tri-agency definition of ECR that is being phased in over time in appropriate programs across all three

agencies. The agencies have also established a common commitment to dedicate a portion of funding in certain grant programs for ECR-led projects, relative to the number of applications received. This balanced funding approach has been implemented in programs including the Tri-Agency New Frontiers in Research Fund (NFRF), CIHR's Project Grants, NSERC's Discovery Grants, and SSHRC's Insight Grants.

Beyond balanced funding, the agencies have implemented a number of measures to support ECRs within their individual programs. NSERC implements a different quality cut-off for funding ECRs in its Discovery program, which ensures the overall ECR success rate is at least 50%, and offers additional sources of support to awardees who are ECRs, including an annual \$5,000 top-up on their Discovery Grant; the Discovery Launch Supplement, a one-time award valued at \$12,500; and, offering ECRs scheduled to apply for their second Discovery Grant the option of accepting an additional year of funding for their existing Discovery Grant at the same level. SSHRC's Insight Development Grants feature a distinct stream for emerging scholars, for which at least 50% of program funds are reserved. CIHR regularly launches ECR-specific awards, workshops or funding opportunities through its priority-driven research programs.

The agencies are also leveraging tri-agency programming to ensure strong support for ECRs. New funding provided in Budget 2018 for the CRC program enabled the creation of 250 additional chairs for exceptional emerging researchers (out of 285 new chairs created), and a new \$20,000 annual research stipend for first term chairs who are ECRs. CRC program data show that approximately 61% of chairs are emerging researchers who are earlier in their career and who are acknowledged by their peers as having the potential to lead in their field. In addition, EDI and ECR support were established as core elements of the NFRF program's Exploration Stream resulting in all grants being awarded to ECRs for the 2018 competition. For the 2019 Exploration competition, 37% of award holders were ECRs.

The agencies have also taken steps to increase opportunities for ECRs to participate in peer review and other professional development activities. SSHRC has implemented targeted recruitment of ECRs for Insight Grants and Insight Development Grants merit review committees, and of postdoctoral fellows for Postdoctoral Fellowship and Doctoral Awards merit review committees. CIHR offers several professional development opportunities for ECRs, including its Reviewer in Training and ECR Awards Review programs that help ECRs develop peer review skills through hands-on experience.

Many ECRs and their work suffered acutely from lost access to research facilities and resources as a result of the COVID-19 pandemic. The situation was particularly complicated for those with caregiving responsibilities. Coordinated

efforts across the three granting agencies were made to ease the financial implications for them, at a critical time in their careers, and help safeguard Canada's next generation of research talent. Recognizing the unique challenges and importance for researchers to establish a strong track record early in their careers, each agency introduced ways to recognize the disruptions caused by the pandemic when determining ECR status—effectively extending ECRs' access to funding equalization measures in their flagship programs. The agencies included COVID-19 as an eligible delay in research in new proposals and extended the period of time over which grant funds could be used for existing awards by one year.

The agencies are now seeing improvements in outcomes for ECRs across a range of key programs. From 2014 to 2021, the proportion of funding going to ECRs in CIHR's Open Operating and Project Grant programs more than doubled, while ECRs' success rate in those programs increased from 12.4% to 19.1%. While the success rate for ECRs in NSERC's Discovery grants decreased from 65.6% to 56.6% during the same period, the percentage of funds awarded to ECRs increased from 12% to 41.1%. For SSHRC, the proportion of funds awarded to ECRs across its Insight and Insight Development Grants increased from 19.6% to 25.3%, while success rates for both ECRs and established researchers increased at similar rates.

Through the CRC program, the Canada First Research Excellence Fund (CFREF) and the Canada Excellence Research Chairs (CERC) programs, the Government is also contributing to the creation of new positions in post-secondary institutions across Canada. The grants awarded to post-secondary institutions through these programs may be used to fund the salaries of researchers and Chairholders, which may support the creation of new tenured positions.

The Government agrees that post-doctoral fellows play a key role in supporting Canada's research ecosystem, and has implemented a number of policies and programs to support them. For example, the Minister of IRCC has designated the work of post-doctoral fellows as necessary for public policy reasons related to the competitiveness of Canada's academic institutions, or economy, under the Immigration and Refugee Protection Regulations. This designation enabled the creation of a specific work permit category under the International Mobility which facilitates access to work permits to support the teaching and research of foreign national post-doctoral fellows. Their advanced studies combined with authorized Canadian work experience in turn supports their successful transition to permanent residence in Canada through federal and provincial-territorial economic immigration programs.

In testimony, witnesses to the Committee highlighted challenges that some post-doctoral fellows face in accessing government supports and services. In the area of healthcare, for example, international post-doctoral fellows in Canada on

a valid work permit do qualify to apply for provincial/territorial healthcare programs. In terms of eligibility for employment supports, post-doctoral fellows are eligible provided they meet the standard requirements for the program. For Employment Insurance, for example, this includes a minimum number of hours of insurable employment. For situations where post-doctoral fellows may not qualify as employees of the universities at which they are based, the Canada Revenue Agency allows both fellows and the universities to request a ruling to determine the appropriate status for the position.

In Budget 2021, the Government took additional steps to ensure that fellowship income would qualify as “earned income” for the purpose of determining an individual’s contribution limit for a registered retirement savings plan (RRSP). This change provides post-doctoral fellows with additional RRSP room in order to make deductible RRSP contributions.

The Government remains committed to ensuring that post-doctoral fellows and other ECRs have access to the opportunities they need to advance in their careers, develop the skills they need, and become future leaders driving innovation in Canada, for Canadians.

*Ensuring Diversity in the Research Ecosystem (Recommendation 10)*

Ensuring diverse cultural and social perspectives helps improve the scientific impact of research, as highly diverse teams tend to outperform in innovation, critical and creative thinking, productivity, and overall performance. The Government remains committed to advancing key policy and program measures to strengthen Canada’s research culture.

Under the leadership of the CRCC, the federal granting agencies launched a comprehensive Tri-Agency EDI Action Plan with measures to increase equitable and inclusive access to granting agency funding. Through this Action Plan, the granting agencies are committed to ensuring that all policies, plans, programs, and processes related to allocating granting agency support are equitable and inclusive, and mitigate bias against underrepresented groups, including selection processes. For example, EDI is one of the core evaluation criteria used to assess all applications for funding under NFRF, giving consideration to a research team’s commitment to fostering EDI in the research environment. As well, leading up to the competitions currently underway, changes were made to the CERC and CFREF programs to better integrate EDI into program design. The CERC program now includes EDI and Indigenous research considerations in terms of project design and research team composition, and the CFREF requires the inclusion of experts from diverse backgrounds on governance and advisory bodies, and that institutions develop an EDI action plan for their proposed initiative.

The granting agencies have also worked with institutions to develop the Dimensions: Equity, Diversity and Inclusion Canada (Dimensions) pilot program, a made-in-Canada adaptation of the internationally recognized Athena SWAN program. Dimensions aims to improve EDI by providing a structure for universities and colleges to transform research culture. Additionally, the granting agencies have funded over \$10 million in EDI capacity-building grants to support institutions to tackle challenges in addressing underrepresentation of specific groups in science and research.

The collection of self-identification data is a central piece of the agencies' commitment to EDI. As part of the EDI action plan, the agencies ask funding applicants and participants in the review process to provide information on various identity factors including, gender, sexual orientation, Indigenous identity, visible minority identity, and disability. This data facilitates monitoring progress on increasing EDI in the agencies' programs, recognizing and removing barriers, and designing new measures to achieve greater EDI in the research enterprise. The Government has also conducted the Survey of Post-secondary Faculty and Researchers to fill data gaps on EDI among those who teach or conduct research in Canada's post-secondary sector. Its results were published in September 2020. The survey showed that Canadian faculty is relatively diverse, that doctoral students and post-doctoral fellows are younger and even more diverse, and that university and college faculty have high levels of gender parity. Lastly, Statistics Canada's University and College Academic Staff System collects nationally comparable information annually on the demographics of full-time teaching staff at Canadian Universities that informs gender-based analyses and other studies conducted by government departments, researchers, professional associations, and international organizations among others.

As the Committee noted, to help increase opportunities for Black Canadian researchers, Budget 2022 provided \$40.9 million over five years and \$9.7 million ongoing to the granting agencies to support targeted scholarships and fellowships for Black student researchers.

As Canada continues its work to promote EDI to tap into the country's full range of talent, it is critical to build new models for Indigenous research and research training informed by First Nations, Inuit, and Métis peoples. The CRCC and the granting agencies partnered with Indigenous peoples to develop the strategic plan titled Setting New Directions to Support Indigenous Research and Research Training in Canada 2019–2022. The plan lays the groundwork to establish a national research program in partnership with Indigenous peoples to advance reconciliation, in response to Truth and Reconciliation Commission Call to Action 65. Furthermore, in 2022, the granting agencies established an Indigenous Leadership Circle in Research to advise them on the implementation of the strategic plan and provide guidance on how to enhance support for Indigenous research and training.

As noted above, Budget 2019 announced support for additional bursaries and scholarships for First Nations, Inuit, and Métis students through a \$9 million investment in Indspire. In September 2022, the Indigenous Scholars Awards and Supplements Pilot Initiative was launched to provide financial support to Indigenous master's students in social science, humanities, natural science, and engineering programs. Through this funding Indigenous students will receive a \$17,500 award as well as a \$5,000 supplement as part of the current Canada Graduate Scholarships.

A diverse, inclusive, and equitable research community leads to the innovative and impactful research necessary to advance knowledge and understanding, and to respond to local, national, and global challenges. The Government will continue its efforts to strengthen EDI in the research community and Canadian society.

*Supporting Talent in the Regions (Recommendation 11)*

Upholding research excellence must remain at the core of decisions related to allocating and awarding federal research funding. The federal granting agencies and the CFI are committed to ensuring that their assessment of excellence is inclusive of the full diversity of Canada's researchers and research institutions. Post-secondary institutions located outside of major city centres, which are predominantly small and medium-sized institutions, play an important role in their communities. As the Committee noted, they often have strong ties to the area—conducting research relevant to the needs of the community, making post-secondary studies more accessible to local students, and retaining talent in the local economy upon matriculation.

Federal research funders have introduced various measures to better support research at small and medium-sized institutions, including those located outside of major cities, while maintaining a commitment to merit:

- NSERC's Discovery Development Grants program has awarded \$4.6 million since 2017 to promote and maintain a diversified base of high-quality research and provide a stimulating environment for research training in small universities across Canada.
- SSHRC's Institutional Grants (SIG) provide annual block grants to help institutions fund, through their own merit review processes, small-scale research and research-related activities. SIG awards are based on a progressive calculation weighted toward smaller institutions, and small institutions can also qualify for an additional supplement of up to \$500,000 per year.
- CIHR is funding research, training, and knowledge mobilization at institutions in all three territories. This includes investments to build research capacity and help address regional health priorities through Canada-wide initiatives designed and developed with regionality in mind, in collaboration

with provincial, territorial, regional and community partners, such as the Strategy for Patient-Oriented Research, and Network Environments for Indigenous Health Research.

- Since 2000, the Tri-Agency CRC program has included a special allocation of Chairs to support research at smaller, regional universities. At present, there are 137 Chairs allocated to institutions that received one percent or less of total agency funding (over the three years prior to the year of the allocation).
- Similarly, the Canada Graduate Scholarship—Master’s program uses an allocation formula to calculate the number of awards per institution per agency that ensures at least one scholarship for all eligible institutions.
- The Tri-Agency CCIP supports college-based applied research in communities across Canada. Its Mobilize stream allows institutions to scale long-term research funding to their level of research activity.

Many institutions that serve Canada’s Official Languages Minority Communities—English-speaking communities in Québec and French-speaking communities in provinces and territories other than Québec—qualify as small institutions and therefore benefit from these measures.

Additionally, the granting agencies provide support to strengthen the capacity of small and medium-scale institutions to conduct high-quality research and training. The Tri-Agency Research Support Fund, which assists with the institutional costs of maintaining a world-class research environment, uses a progressive funding formula that awards higher rates of funding to institutions that receive the least amount of money from the federal research granting agencies, in order to help smaller institutions build capacity. The CFI’s John R. Evans Leaders Fund ensures that small institutions in Canada have a fair and equitable chance at receiving support for research infrastructure, by allowing them to access dedicated additional funding through the Small Institution Fund, offering greater flexibility to address growth potential.

#### *Colleges as Centres of Skills and Innovation (Recommendation 12)*

The Government recognizes the important role of community-based innovation to the Canadian economy and society. Colleges and CEGEPs play a fundamental role in Canada’s skills and innovation ecosystem: training students, driving regional economic development, and providing applied research services to companies and community organizations. Indeed, all college-based research is applied research and is driven by the needs of external partner organizations in local communities.

Colleges are a major source of skilled talent trained to meet the labour market needs of local employers and support their operations and growth. They provide hands-on opportunities for students to work alongside external partners on research

projects to solve real-world challenges, thus ensuring that graduates enter the labour market with strong problem-solving skills, employer connections, and relevant experience. According to Colleges and Institutes Canada, in 2019–2020, 42,000 students contributed to applied research projects at college and institute laboratories and research centres, an increase of 45% over two years.

The CCIP supports Canada's colleges to partner with local organizations from the private, public, health, and not-for-profit sectors, including with small and medium-sized enterprises (SMEs), on applied research and innovation activities, and with community organizations on issues of social importance. The program features five types of grants that support applied research projects led by college researchers and enable colleges to provide expertise, technology and equipment to support partners:

- Applied Research and Development (ARD) grants support projects that respond to an applied research challenge, and are led by college researchers in partnership with private sector, public sector, or not-for-profit organizations, while encouraging collaboration with universities and/or other colleges. Over 91% of ARD grants from 2017 to 2022 involved student participation.
- College and Community Social Innovation Fund (CCSIF) grants bring together researchers, students and community organization partners to address challenges in community innovation in the social sciences, humanities, health sciences, natural sciences, and engineering research fields.
- As an enabler for applied research, the newly created Mobilize grants provide long-term flexible funding to support a strategic and systematic approach to college-wide applied research activities that are focused on the evolving research and development needs of college partners. For example, colleges can apply for the funding they need to establish a new applied research program, enhance an existing program, or undertake a number of short, time-critical applied research projects, without having to apply for individual project grants. The five-year term of Mobilize grants allows the sector to plan its activities and adjust to new opportunities as these emerge. Data for the first Mobilize competition indicated that 3,600 college students had been paid for research work on CCIP funded projects.
- Technology Access Centres (TAC) grants support specialized centres that provide applied research services to the college's community clients to generate business, social and health benefits. To date, 2,353 post-secondary students have participated in work-placements at TACs, 79% of which were from a college or CEGEP while 21% were from a university.

- Applied Research Tools and Instruments (ARTI) grants, which have yet to be launched under the redesigned CCIP, will support the purchase of research equipment and installations to foster and enhance the capacity of colleges to undertake applied research, innovation and training in collaboration with local organizations.

The importance that the federal government places on support for applied research in colleges has been demonstrated in a series of investments in recent years. Following a successful pilot, Budget 2017 invested \$10 million over two years in the CCSIF starting in 2017–2018. Budget 2018 announced \$140 million over five years, and \$30 million per year ongoing, for the CCIP, which supported doubling the number of TACs, from 30 to 60. Budget 2021 provided CCIP with \$46.9 million over two years to fund ARTI grants. Budget 2021 provided an investment of \$5.7 million over two years, to provide more businesses with access to the National Research Council's Industrial Research Assistance Program's Interactive Visits, where firms can access equipment, facilities, and expertise at college-affiliated TACs.

*Strengthening Experiential Learning Opportunities for Students  
(Recommendation 13)*

The Government recognizes that knowledge and talent are a key competitive advantage in driving an innovative and high-growth Canadian economy. In today's tight labour market, where firms are struggling to find the skilled workforce needed to grow and succeed, supporting employers in accessing talent, both domestic and international, is more important than ever. Canadian workers are among the most educated in the world, and yet despite this, employers often report obstacles with post-secondary graduate transition into the workforce.

Providing real-world, job-relevant experience to students and recent graduates complements knowledge gained from studies, while helping develop the talent and leadership required to sustain our highly skilled workforce. Work-integrated learning (WIL) opportunities provide this experiential learning, typically through an internship, fellowship, or job placement, and are recognized as an effective way to ensure graduates have both the technical and work-ready skills demanded by employers. Students who participate in WIL opportunities are more likely to benefit from higher earnings and improved labour market outcomes in the long term. WIL also fosters a talent and innovation pipeline, helping solidify our place in the global knowledge and innovation economy. Outlined below are examples of such supports.

Mitacs—a national, not-for-profit corporation dedicated to promoting high-quality research and innovation across Canada—has been an important partner in helping forge collaboration through its internship programs between the

post-secondary and post-doctoral ecosystem to all sectors of the economy. Mitacs' WIL programming focuses on placements in applied research and development, business strategy and entrepreneurial partnerships, as well as commercialization efforts in bringing discoveries to market. Mitacs' suite of international programming placements has also been a significant resource in facilitating the inbound and outbound mobility of students, helping support the Government's objectives to attract and retain diverse high-quality talent; drive international research and development connections; strengthen Canada's capacity for global economic activity; and position Canada as a global partner of choice.

Government funding to Mitacs over the last ten years has supported close to 70,000 WIL opportunities, with annual targets increasing from 6,500 in 2017–2018 to 15,000 in 2020–2021. This is why Budget 2021 provided \$708 million to Mitacs to create an additional 85,000 WIL placements over five years to foster innovative partnerships for businesses to grow, and provide on-the-job training for students and recent graduates. As an independent not-for-profit organization, Mitacs also leverages this federal contribution with co-funding from provincial-territorial governments, as well as industry and not-for-profit partners. Within the first year of Budget 2021 funding, Mitacs delivered 15,547 WIL opportunities. Over 19,000 WIL placements are anticipated for 2022–2023. This investment builds on support the Government of Canada has provided to Mitacs since Budget 2012, and will continue to develop talented, high-calibre researchers and entrepreneurs that is essential in solidifying our place in the global knowledge and innovation economy.

The Student Work Placement (SWP) Program supports the creation of WIL opportunities for students of all ages enrolled in any post-secondary program at a college, university, or polytechnic in Canada. Supported student work placements can include, but are not limited to co-op placements, practicums, and internships, for which the duration does not generally exceed four months. Since its creation in 2017, the SWP program has supported the creation of over 100,000 WIL opportunities across Canada. Almost 47% of placements have been held by underrepresented and first-year students. More than 6,800 employers, and 236 post-secondary education institutions across Canada have participated in the program and over 90% of employers are SMEs.

Organizations such as the Business + Higher Education Roundtable (BHER), representing businesses and post-secondary institutions, also help in strengthening Canada's WIL ecosystem by building new partnerships, enlisting employer participation, and promoting the value of WIL as industry-focused skills solutions for Canada's evolving workforce. In September 2022, the Government of Canada announced a renewed \$17.1 million investment in BHER to support

WIL opportunities across Canada. Through this funding, BHER has committed to create and scale 22,300 WIL placements, while strengthening the WIL ecosystem by developing new tools and resources for employers.

The Youth Employment and Skills Strategy (YESS) is a horizontal initiative overseen by ESDC and delivered by 12 federal departments to help young Canadians (ages 15–30) gain the skills and work experience needed to find and maintain quality, permanent employment. The YESS was provided \$301.4 million over three years starting in 2022–2023. This is in addition to \$575.3 million announced in the 2020 Fall Economic Statement to create 45,300 job placements for youth over two years.

Budget 2021 also announced \$4 billion for the Canada Digital Adoption Program (CDAP), starting in 2021–2022, to help SMEs assess their digital readiness and adopt digital technologies. As part of this programming, the CDAP will create up to 28,000 work placements for young Canadians designed to provide additional support for SMEs in undertaking their digital transformation.

Since 2017, CIHR's Health System Impact Fellowship has provided highly qualified doctoral trainees and post-doctoral fellows studying health services and policy research the opportunity to apply their research and analytic talents to critical challenges that are being addressed by the health system and related organizations (e.g., public, private for-profit, not-for-profit, and Indigenous health organizations that are not universities) outside of the traditional scholarly setting, and to develop professional experience, new skills, and networks. This program has embedded 245 Fellows, 18 PhD, and 25 post-doc fellows in 2022 alone, within 115 health system organizations across Canada to accelerate evidence-informed health system improvements while also developing the next generation of health system leaders.

These select examples highlight the depth and breadth of talent investments supported by the Government, including the importance of complimentary industry-led, third-party delivery partnerships. These initiatives also highlight the importance of supporting demand-driven skills initiatives to help make Canada's skills and talent ecosystem more responsive to industry needs, as well as placing young Canadians at the centre of Canada's economic recovery to prioritize their success.

### *Conclusion*

It is our collective responsibility to ensure that Canada remains at the forefront for the global competition for top talent. The Government looks forward to working with Canadian post-secondary institutions, Canada's established and emerging researchers, important third-party organizations, and Canadians writ large, toward maintaining Canada's role as a global leader in research and innovation.

This will involve continuing to attract, train, and retain talent by improving our facilities, processes, policies, and support for students and researchers at all career stages. Doing so will ensure that the Canadian academic and research ecosystem generates health, social, technological, environmental, and economic benefits for Canadians and provides a supply of well-trained researchers to work across all sectors of the economy.

As the Government considers future approaches for attracting, training, and retaining top talent, the Government will take into account the Committee's recommendations. Our coordinated efforts today will be a critical factor in strengthening the pipeline for the new technologies and talent of tomorrow, thereby laying a solid foundation for long-term socio-economic recovery and enduring resilience for Canada—an endeavour that will benefit Canadians, our allies and the world.

The Government would like to reiterate its thanks to members of the Committee for their dedication in undertaking this review and their commitment to science and research more broadly.

Sincerely,

A handwritten signature in black ink, appearing to read 'F. Champagne', with a stylized flourish at the end.

The Honourable François-Philippe Champagne, P.C., M.P.