Canada's investment into clean tech: Innovation or politics as usual?

By Lucy Wang

COVID-19 has thrown science into the spotlight.

Recent years were the first time many scientists heard their jargon uttered on television; terms like "PCR", "R_0", and "reagent" were spoken awkwardly by politicians in front of news cameras to people who now anxiously await daily updates from the "science table". Science funding and management became a topic of debate and, sometimes, scandal. Conservative privatization of the Connaught vaccine labs in the 1980's, for instance, came under scrutiny as our government was criticized over decisions previously deemed "fiscally responsible". Canada's lack of pharmaceutical infrastructure put us in a tough bargaining position during the global scurry for vaccines, as countries with manufacturing capability halted vaccine exports at the most critical times during the pandemic.

As we prepare to enter the post-pandemic era, how can we use these tough lessons to tackle the more pressing issues surrounding climate change? After our experience with the pandemic, innovation and sustainable planning are garnering political popularity – a much-needed paradigm shift for those of us in science who have borne the brunt of a decade-long funding drought. Research funding for the public sector had remained largely stagnant since 2010.[1] CIHR and NSERC grant success rates have dropped nearly 20% compared to the early 2000's.[2,3] Operating in the only developed country with a decline in basic science, Canadian academics have been working from a position of scarcity.[4]

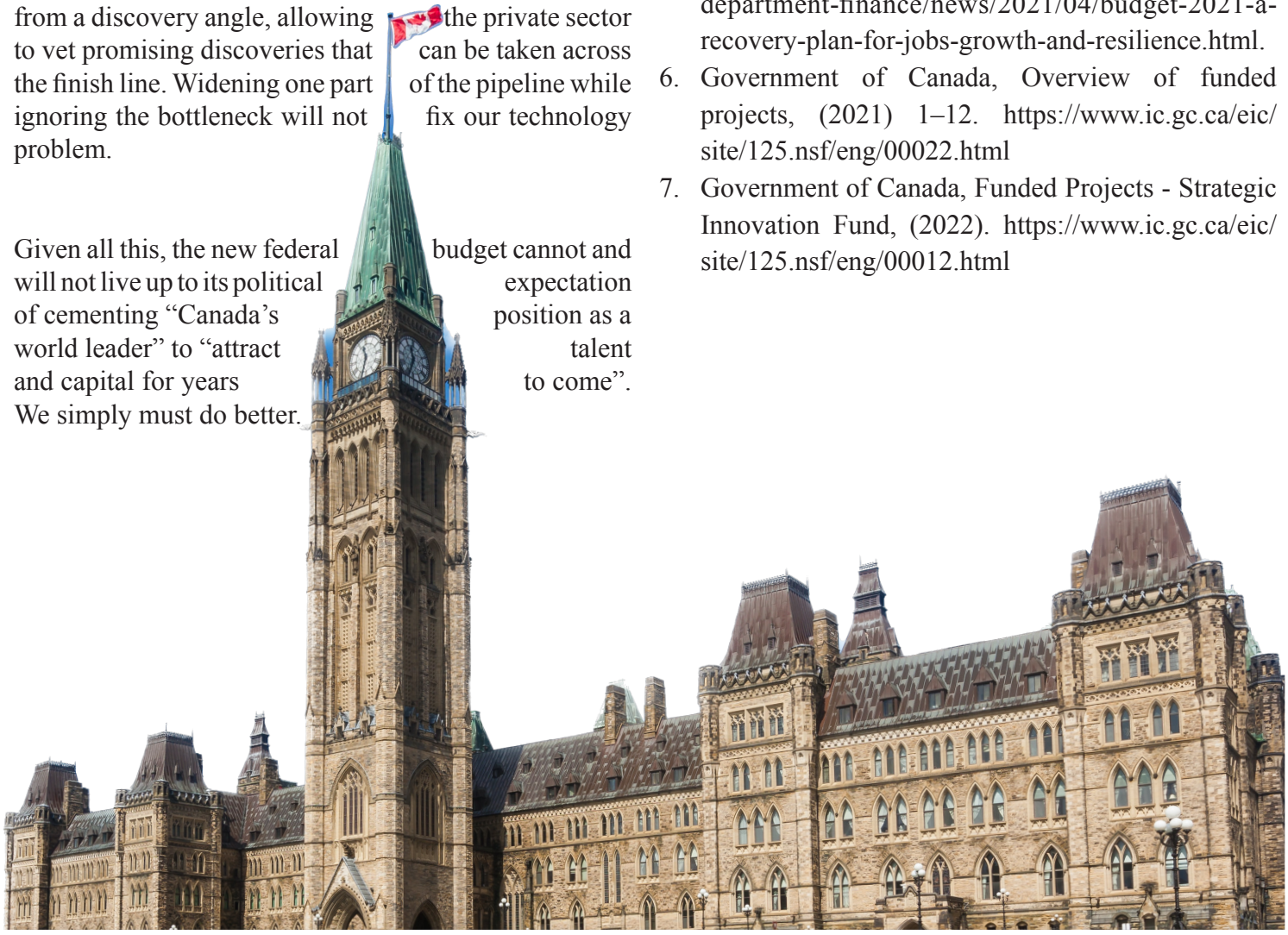
Recognizing these downfalls, the federal government's 2021 science and innovation budget aimed to redirect focus towards increased investigation spending as a way to jump-start our post-pandemic economy.[5] In April 2021, the federal government announced a $2.2 billion budget for life and computer sciences on top of a $17 billion budget for green technology innovation. Despite these seemingly impressive sums, particularly in the climate initiative section, the 2021 budget was highly criticized by the scientific community for its lack of support for the basic sciences relative to the applied sciences. For instance, under the new federal budget, the tri-agencies will receive just $250 million of the $2.2 billion investment towards "innovative projects". This is in stark contrast to the $1 billion that will be going towards creating domestic bio-manufacturing capabilities, likely in collaboration with Big Pharma.

Looking solely at the green technology initiative, the federal government has pledged $8 billion towards the support of innovative projects aimed at reducing greenhouse gases. This funding will be allocated to and administered by the Net Zero Accelerator (NZA), an initiative set up to support Canada's goal of net zero carbon emissions. However, the NZA falls under the administrative umbrella of the Strategic Innovation Fund (SIF), a framework tailored towards supporting industry initiatives, many of which are not especially innovative. For example, at the time of this article's writing, funding disclosures surrounding the 41 clean technology

companies already being funded by the SIF reveal that a little over half the total spendings on clean technology were for retrofitting or infrastructure upgrades for existing companies—some of which are oil and gas companies.[6,7] This poses a fundamental issue with transparency, as projects that the science community would not consider to be technological advancements are being touted as "innovation".

Nevertheless, the aim of this article is not to say that these projects are not worth funding but rather that it is important for us to define innovation and keep it from becoming a buzzword umbrella term, under which politicians can be less accountable to public expectation – namely the expectation that grant money will be spent on scientific advancement and the development of novel ideas. Furthermore, although investing in industry is not "wrong" (companies such as Tesla Inc. have certainly had a massive hand in spearheading clean energy), putting most of our resources into private interests overlooks the purpose of academic innovation. Indeed, the two sectors often work in harmony, with academics coming from a discovery angle, allowing the private sector to vet promising discoveries that can be taken across the finish line. Widening one part of the pipeline while ignoring the bottleneck will not fix our technology problem.

Given all this, the new federal budget cannot and will not live up to its political expectation of cementing "Canada's position as a world leader" to "attract talent and capital for years to come". We simply must do better.



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