



1. *Science – social, natural and health – is a fundamental part of Canada, having relevance to societal well-being, human functioning, health, technology, innovation, productivity and the economy. **What is your party's commitment to research and development?***

Canada's economic priority must be innovation. We have increasingly skewed our economy towards raw resource export: putting all our eggs in the bitumen basket was never good economic policy and the dropping price for a barrel of oil makes this ever more transparent. Raw resource production as a sector invests far less in Research and Development (R&D) and innovation than manufacturing. According to the Conference Board of Canada, Canada has slipped in productivity to 13th out of 16 countries studied. Corporate tax cuts have not resulted in improvements in productivity.

Surely, we can adjust the corporate tax rate, now half that of the US. And we can direct funds to innovators and R&D. We need to embrace the 21st century economic revolution of clean technology. More R&D and innovation will come from manufacturing and clean technology. Greens want to create a federally-funded \$1 billion per year Green Technology Commercialization Grants to accelerate emerging technologies and give Canadian entrepreneurs a head start. By facilitating increased access to early-stage financing, the Green Technology Commercialization Grant will help our entrepreneurs compete internationally. It will help good ideas and emerging technology get to market, growing our sustainable economy and creating good local jobs and opportunities in our communities.

We are a nation of innovators. While a long series of policies have reversed our economic progress, hitching us to our 19th century role as hewers of wood and drawers of water, Canadians are ready for a sustainable, clean 21st century economy.

- OECD data shows that Canada's gross domestic expenditure on R&D, as a percentage of GDP, at just 1.6% in 2013 is lower than the OECD average of 2.4%, and significantly lower than other countries such as the U.S., Korea, Germany, Sweden and Finland. Further, while investments have been and continue to be made in funding programs for research excellence, many researchers rated highly by international standards of excellence continue to be turned down each year due to lack of funding. **Does your party plan to increase the base budgets for the three granting councils? If yes, by how much or by what percentage of the GDP?***

The Green Party is committed to making Canada a world leader in science and humanities research. We will increase funding to federal research councils by 15 percent annually for four years. Publicly funded research is a collective investment in our future. By starving the source of creativity and discovery, we are rapidly losing our capacity for long-term innovation. Funding that was previously destined for basic and curiosity-driven research in many labs across Canada has been shifted into partnerships with industry, with a concentration in large research-intensive universities. This is bad policy, both for enhancing our research capacity and for the education of highly qualified scientists and academics across the country. Graduate students can find themselves spending more time filling out grant applications than working in their labs. Green MPs will fight to rectify this imbalance and restore funding to basic and curiosity-driven research.

- One of the key aspects needed to support people and businesses, including government, is support for research that is conducted both within and outside of academic settings alongside support for various building blocks of Canada's national research capacity and public science. **What will your party do to support research in these areas?***

Scientific evidence should be the foundation of federal decision-making. Scientific research should not be influenced by partisan considerations, nor should it be subject to across-the-board austerity measures. We must restore and expand our scientific capacity. Scientific evidence will always serve as a non-partisan check on authority. Its integration into government activities must be assured. Our democracy depends on it.

The Green Party will rebuild scientific capacity in the Government of Canada with particular attention to departments that have incurred the most devastating losses – Environment Canada, Fisheries and Oceans, Parks Canada, and Health Canada. Priority areas for immediate action include restoring the Ocean Contaminants & Marine Toxicology Program, renewing and increasing capacity in the Canadian Coast Guard (particularly in the areas of emergency response and spill prevention), and reversing cuts to climate adaptation programs.



In addition, the Green Party will take the following steps to increase public science capacity at the federal level:

- Direct the Clerk of the Privy Council to reform the civil service to elevate core competence over management culture.
- Include \$75 million annually in the federal budget to be used for adding knowledgeable scientific staff to Environment Canada, Health Canada, and Fisheries and Oceans, thereby increasing their competency.
- Re-establish the post of Ambassador for the Environment and Sustainable Development, a position that was eliminated by the Conservatives in 2006.
- Ensure that scientists in the federal government are free to publish their research and to speak to the media and public about their findings, without interference from multiple levels of management bureaucracy.
- Reinstate federal funding to the Experimental Lakes Area to assist the Ontario government and the International Institute for Sustainable Development with management of the 58 inland lakes and their unique research.
- Re-establish the adaptation research group within Environment Canada and restore funding to climate science through the Canadian Climate Forum.
- Re-establish the Marine Mammals Contaminants Monitoring Program within the Department of Fisheries and Oceans.
- Establish a task force with expertise from science librarians, the Royal Society of Canada, and others with library and archives experience to review the closing of federal science libraries during the Harper era. A full review needs to be undertaken to determine whether the federal law protecting our documentary heritage was violated, to assess damage, and make recommendations for restoring scientific library capacity within the federal government. This review should be expeditious, with a mandate to report findings within 12 months.
- Ensure the independence of the Commissioner for the Environment and Sustainable Development, through a stand-alone piece of legislation allowing the Commissioner to report directly to the House of Commons and serve as an Officer of Parliament.
- Create a robust and independent National Academy of Sciences that builds on the independent not-for profit Council of Canadian Academies, bringing together the Royal Society of Canada, the Canadian Academy of Engineering, and the Canadian Academy of Health Sciences. Among other things, this would provide lawmakers with direct access to objective science on medicine, energy, the environment and more for evaluating the evidentiary foundations of any proposed legislation.



4. *Reliable data and research that is both collected and conducted in a standardized manner from a representative sample can be critically and meaningfully used to inform public policy, direct innovation, influence economic and social prosperity, and examine complex socio-economic issues. **What will your party do to base policies on scientific evidence?***

We live in an information age. Governments are both uniquely placed and democratically mandated to make full use of available scientific evidence in service of the public good. Yet, despite the unprecedented accessibility of current scientific evidence, our government persists in decision-based evidence-making.

To access the best available evidence, we need to invest in the best available science. The Green Party believes we must renew our commitment to public science by reinvesting in our in our federal scientific capacity. We must also defend and promote “Discovery Science,” or basic research. Funding for curiosity-driven research is scarce in Canada. Instead of funding scientific inquiry, we are subsidizing the profit-driven research & development of large corporations. The health of basic research in Canada must be restored.

However, the best available evidence is only as good insofar as it informs government decision-making. The Green Party will strengthen the role of scientific evidence in federal decision-making by implementing several key reforms.

We will start by bolstering the science-based decision-making capacity of the executive and legislative branches. The foolish cuts made by the Harper Conservatives must be reversed and the position of the National Science Advisor to the Prime Minister restored. As many experts have called for, we must establish an independent Parliamentary Science Officer to provide Parliamentarians and the public with independent scientific analysis on the issues of the day. The Green Party will also build a mandatory evaluation of the evidentiary foundations of any proposed legislation into the federal legislative process. This means establishing that the evidence is transparent, rigorous and ethically-produced; that there is an open flow of information; that the evidence is preserved and easy to access and understand; and that the evidence used is the best available information and free from political manipulation. The evidentiary basis for all of our laws should be evaluated regularly and laws revised as needed.

The Green Party will also commit to unmuzzling our federal scientists. Public science belongs to the people. It is not for the communications specialists in the Prime Minister’s Office to decide what publicly funded information becomes known. In June, 2015, Elizabeth May introduced the [Public Access to Science Act](#) to make all publicly funded scientific research publicly accessible by law. As Ms. May said at the time: “My bill will ensure that no prime minister can ever bury government science again. While this problem is not new, the Harper years have seen a shocking burial of evidence into places where Canadians will never see it. The work our



scientists do is too important to be hidden from view, simply because it is inconvenient to the Prime Minister's agenda. The challenges we face require an open and transparent engagement with the facts."

We need to lift the cloud of darkness recently placed on the federal public service, where scientists have been forbidden from sharing their findings with the public. The challenges we face are existential. We need all the evidence we can muster to design the best possible policies to meet them. It is irresponsible to hide evidence because it is inconvenient.

5. *Scientific evidence is key to policy-making. Decisions must be well-informed through public research and building a science culture in Canada that is inter-disciplinary in nature, and supports inquiry and results. **Will your party establish a parliamentary science office to guide the use of scientific evidence in policy-making?***

The Green Party enthusiastically supports the creation of a Parliamentary Science Office. The politicization of science in the legislative process is a permanent challenge, from public illiteracy regarding climate change to the muzzling of government scientists. Scientific literacy is underrepresented among politicians. The Public Policy Forum determined that only 4.2% of MPs with post-secondary education hold degrees in the sciences or engineering, compared to 21% of post-secondary graduates in the general population. A science watchdog could objectively advise MPs on the merits of legislation in a way accountable to all Canadians.

6. *Data from the most recent National Graduates Survey show that Master's degree holders from the class of 2010 held an average total student debt of \$26,600; PhD graduates held an average debt of \$41,100. With fewer public financial assistance programs available, many graduate students are forced to turn to private sources. For PhD graduates that rely on private debt alone, debt has increased 114% from 2000 to 2010 to an average of \$40,000. **How does your party plan to increase financial support for graduate students, and by how much?***

The current generation of young Canadians faces increasing costs for housing, education, and childcare, and unprecedented personal debt. The Green Party believes it's time to change how we look at post-secondary education. Rather than a private commodity that young people purchase to advance themselves, we need to see education as a public good. We need to see the shared value of empowering a generation of youth to learn a trade, train as scientists, or study the humanities. We can address our skills shortages and create a generation ready for the information economy. We can equip youth with the tools they'll need to be good global and Canadian citizens.

Our goal is to eliminate tuition fees. This will not happen overnight. Working with universities, colleges, and the [Council of Canadian Governments](#), we will aim to abolish tuition fees by 2020.



As a first step, the Green Party proposes that the federal government forgive and erase any existing student debt to ensure that no student has more than \$10,000 in debt to the federal government. At the same time, the federal government should make all remaining and new student loans interest free. The federal government should also provide full-tuition bursaries for those who need them the most: Indigenous and low-income students. We need to remove the 2% funding cap and fully fund the program backlog for Indigenous students immediately. We need to move right away to needs-based full-tuition bursaries.

But tuition fees are not the only thing students are struggling to afford. As tuition fees rise, students are having a harder time affording even to feed themselves. [Food banks](#) are popping up in campuses across the country. Textbook costs have risen [at a rate 2.4 times that of inflation](#) since 2008. The Green Party's Guaranteed Livable Income (GLI), will also give the students the security they need to pursue an education without living in fear of falling into poverty. A GLI would provide a regular payment to every Canadian, at a level above the poverty line, to meet Canadians' basic needs while encouraging additional income generation. For higher-income Canadians, the amount of the GLI is merely taxed back in whole. A GLI will give students the support they need to study, without having to sacrifice their mental and physical well-being.

Investing in post-secondary education is an investment in the future of Canada. If we eliminate barriers to access to post-secondary education, we will emerge stronger economically, with engaged citizens able to compete on the world stage.

The Green Party will commit to increasing the number of Canada Graduate Scholarships. We will extend grant availability to Graduate and Doctoral Students and establish an Opportunity Grant under the Canada Student Grants Program for graduate students with high financial need.

7. Reflecting on the above or your party' science and technology strategy/platform, how would your party prioritize its investments in science and technology?

In the 21st century, we need to reinvent the way we work as a federation. We need to work together to develop national goals and national strategies. To this end, we will create a Council of Canadian Governments to address shared challenges and ensure more effective collaboration between the various levels of government in Canada – federal, provincial/territorial, municipal/local, and First Nations, Metis and Inuit. In order to make progress on critical issues, such as science and technology (S&T), it is important that all levels of government are pulling in the same direction. With a transparent process, a published agenda and a clear path to set in place inter-jurisdictional approaches to collective S&T challenges. We would work to ensure any S&T strategy is transparent, accountable, and based on the best evidence available.



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