



Sustaining Life Sciences Innovation With SR&ED Investment Tax Credits

A BIOALBERTA DISCUSSION PAPER

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EXECUTIVE SUMMARY

Alberta's Scientific Research & Experimental Development (SR&ED) Investment Tax Credit is of vital importance for the health of the province's life sciences industry. This industry, with its diverse subsectors, employs over 18,000 people directly and indirectly in high-quality, knowledge based jobs, while generating nearly \$1 billion in revenue annually. The industry is particularly strong in medical device and technology companies, which account for nearly 40% of the total. The industry makes use of and commercializes local strengths in medical, agricultural, and industrial biotechnology, utilizing knowledge developed in the province's world-class universities and research institutions.

The industry has a strong potential as a future source of economic diversification for Alberta: it shows a high-rate of new company formation, indicating both entrepreneurial drive and belief in the potential of the life sciences to generate wealth.

The refundable tax credits provide vital support to Alberta SMEs at each stage of their growth, and aids them in overcoming a number of significant challenges. The greatest of these obstacles is difficulty accessing angel and venture capital. The credit helps companies conduct research, test concepts, and build and demonstrate prototypes, thus making them more attractive to investors.

This discussion paper provides an overview of the economic rationale for tax credits, a history and outline of the Alberta SR&ED Investment Tax Credit, and how it complements the federal SR&ED Investment Tax Credit. Quebec is used as an example of a Canadian province that has succeeded in diversifying its industrial base into biotechnology through use of tax incentives.

This is followed by testimonials from Alberta life science SMEs that utilize the provincial tax credit, its importance to their continued operations, and an overview of how the tax credit fits into the development of Alberta SMEs from startups through maturity.

The discussion paper concludes by summarizing the case for extending the SR&ED Investment Tax Credit. In addition, it makes a case for simplifying the tax credit to make compliance easier and less expensive for Alberta SMEs, thus improving the credit's value.

BioAlberta acknowledges the input of the Innovation Collaborative of Alberta (INC) into this report. INC consists of the following provincial Technology Associations and Organizations:

- BioAlberta: Life Sciences;
- Agriculture and Food Council of Alberta (AFC): Food Production;
- nanocluster Alberta: Nano & MEMS technology companies;
- Alberta Clean Technology Industry Alliance (ACTia): CleanTech companies;
- Technology Alberta: Information and Communication Technology companies;
- A100: experienced technology executives involved in mentoring CEOs of startup companies; and
- The Alberta Council of Technologies (ABCtech) comprised primarily of individuals working in the Technology community;

all collectively supporting companies that benefit from the SR&ED program and working to build the Alberta Technology ecosystem and overall sector. The appendices of this discussion paper include letters

KEY RECOMMENDATION

- 1) **Renew the Alberta SR&ED Investment Tax Credit**
- 2) **Simplify the tax credit to reduce compliance costs.**

of support from ACTiA, AFC, nanoCluster Alberta and Technology Alberta, along with additional testimonials from representative Alberta high-tech companies.

About BioAlberta: BioAlberta has been the central voice and organizing hub of the life sciences industry in Alberta since 1998. It is a private, not-for-profit industry association with more than 140 members. The Association's activities are focused on advocacy, promotion, industry development, and networking. In its advocacy efforts on the national stage, BioAlberta joins forces with other life science organizations such as BIOTECCanada and its counterparts in other provinces.

INTRODUCTION

This BioAlberta discussion paper addresses the need for continuing the provincial Scientific Research & Experimental Development (SR&ED) Investment Tax Credit. The credit is a key support for the province's life sciences industry, helping companies at all stages of their development.

Alberta is home to a vibrant and diverse life sciences industry. With over 200 private sector companies, ranging from small and medium sized enterprises (SMEs) to multinational enterprises (MNEs), working in sectors such as pharmaceuticals, medical devices, natural health products, and industrial, environmental, and agricultural biotechnology, the life sciences are a significant contributor to Alberta's economic growth and diversification.

The private sector segment of the industry employs over 18,000 people directly and indirectly, over 60% of them holders of post secondary degrees or diplomas, and makes use of made-in-Alberta research from the province's universities. In 2014, the industry had over \$1 billion in revenues and invested \$146 million in research and development. 40% of the industry was in the medical device and technology field.¹

The public sector and service segment of the industry employs at least another 100,000 people. The industry integrates research and development, science and technology, access to global markets, highly trained people, and wealth creation. As a result, the industry is forming the foundation for further economic development and diversification beyond oil and gas.

Despite its successes, the industry faces a number of persistent challenges that can be obstacles for growth and expansion. Chief among them is difficulty raising capital for research, development, and commercialization. Both angel investors and venture capitalists prefer to focus their investments on later stage companies – ones with completed products that need assistance with scale-up to meet sales demands. Many companies in Alberta are in the early validation stages of their product development and consequently have more difficulty attracting funding.

Life sciences companies in Alberta have been supported by and relied upon the provincial government's effective tax policies, in particular its commitment to the Alberta Scientific Research & Experimental Development (SR&ED) Investment Tax Credit. This refundable tax credit, which is combinable with the similar federal incentive, provides much needed assistance to companies pursuing innovative research and commercialization while also making Alberta an attractive destination for multinational companies looking to establish research activity.

The provincial SR&ED tax credit is vital to the health and future of the life sciences industry in Alberta, providing a level playing field with other Canadian jurisdictions. Without it, companies will close down research initiatives and facilities or move to other jurisdictions, bright Alberta graduates in fields, such as, science and medical research will be unable to find employment in the province, and our substantial investment in research and development, both in the public and private sector, will not readily find receptor capacity to take Alberta innovations to market.

¹ *BioAlberta/Deloitte Life Sciences In Alberta 2015 State of the Industry Report*

THE ROLE OF TAX CREDITS IN ENCOURAGING INNOVATION

Research and development investment by Canadian businesses, in particular small and medium size enterprises (SMEs), is a critical factor in economic growth. R&D spending creates new knowledge that leads to new products and services as well as improved quality and delivery efficiency in existing ones. These factors make companies' exports more competitive, which in turn raise the trade capacity of Canada. The profits from these discoveries can then be reinvested in more R&D, creating a virtuous cycle.² Research and development efforts create substantial benefits for society in greater economic performance, new job creation, as well as improved human health and quality of life.

Even with these clear benefits there is a tendency for companies to invest less in R&D than may be socially desirable. This is due to several factors:

- **Uninsurable Risk:** Research and development efforts, being inherently uncertain and with results that cannot be known beforehand, carry with them a very high level of uninsurable risk.³
- **Large Minimal Efficient Scale:** Research efforts require a large minimum efficient scale to produce major innovations: though the relationship is not 1:1, a highly significant advance in quality or efficiency requires a substantial research program to develop it. The size of a research effort is correlated with how quickly breakthrough discoveries are made.⁴
- **Difficulties With Capitalization:** Venture capital investors prefer the more certain returns of expanding capacity for known products with already existing markets, such as opening new plants or hiring sales staff, to the uncertain returns of new and original developments whose markets may be speculative. This puts startups, which are in a position to develop and commercialize scientific and technological breakthroughs, at a distinct disadvantage.⁵

With this tendency of companies to underinvest in R&D it is natural that governments, both federally and provincially, would seek means to incentivize research. These incentives commonly take one of two forms: direct grants to businesses to fund R&D projects or tax credits for incurred R&D expenditures.⁶

Governments in Canada, the United States, and the European Union have historically favoured R&D tax credits over direct grants, though they have often offered both. The reason for this favouring is that credits are more neutral with respect to industry. This neutrality minimizes the discretionary decisions involved in project selection by government, reducing the risk of "government failure" in misjudging the most viable R&D projects.⁷ Instead, the decision is left to the private sector actors with greater knowledge of promising developments.

The evidence that R&D tax credits stimulate private sector research and development spending is strong. Studies have shown that Canadian companies that receive R&D tax credits are more likely (than companies that did not) to produce world-first innovations⁸, have a greater proportion of their sales made up of new and advanced products⁹. Tax credits are a powerful part of a government's toolbox for stimulating economic growth and diversification.

² Evans 2009: 1

³ Czarnitzki, Hanel & Rosa 2005: 2

⁴ Czarnitzki, Hanel, & Rosa 2005: 2

⁵ Czarnitzki, Hanel, & Rosa 2005: 2

⁶ Evans 2009: 6

⁷ Czarnitzki, Hanel, & Rosa 2005: 4-5

⁸ Hanel 2003: 29

⁹ Czarnitzki, Hanel & Rosa 2005: 24

Revenue Canada and the federal Department of Finance have found that the federal SR&ED Investment Tax Credit produces substantial research spending increases for Canada, with an average of \$1.38 of incremental R&D spending produced for each dollar of foregone tax revenue. The same study found that private sector R&D spending is 32 percent higher than, absent the SR&ED incentive, it would have been.¹⁰ Perhaps, because of this historical evidence, the recommendation of the Innovative Canada: A Call To Action report (aka The Jenkins Report) to eliminate the federal SR&ED credit was not implemented.

At the time this discussion paper was prepared no similar data on the performance of the Alberta SR&ED Investment Tax Credit was available. However, it is reasonable to presume that similar benefits are produced by the provincial program. BioAlberta's consultations with its members, some of whom provided testimonials as to the importance of the provincial credits to their operations (see Testimonials section below), lead to the conclusion that the provincial tax credit generates substantial R&D and industry investment within the province.

¹⁰ *The Federal System of Income Tax Incentives for Scientific Research and Experimental Development: Evaluation Report* (1997)

ALBERTA'S SR&ED TAX CREDITS

The Alberta **Scientific Research & Experiment Development** (SR&ED) Investment Tax Credit is a refundable tax credit available to Alberta corporations that are engaged in scientific research and development aimed toward developing new products, or improving existing materials, devices, products, or processes (including incremental improvements). The credits were implemented in the 2008 provincial budget. Alberta is the last province to implement a provincial R&D tax credit (Prince Edward does not have one). See Table 1 for a comparison of Alberta's R&D tax credit regime with those of other Canadian provinces.

As currently defined, companies that are (a) permanently resident in Alberta and (b) conducted the scientific research for which they are claiming the tax credits within Alberta can claim up to 10% of their R&D expenditures as a tax credit, to a limit of \$4 million, for a total refundable credit of \$400,000. Because the credit is refundable this benefit is especially valuable to startup and emerging companies that have not yet generated taxable revenue, providing them with a valuable source of funds. This makes them attractive to investors, as dollars invested in R&D go further than they would have without the credit.

Over 60% of Alberta life science SMEs make use of SR&ED (see Table 2 below)

Since 2014, the Alberta tax credit covers the following qualified expenditures:

- Salaries
- 80% of subcontracting costs (including contract R&D)
- Materials
- Overhead costs

The Alberta SR&ED is a complement to the Canada Revenue Agency's SR&ED Investment Tax Credit; a company can claim both, stacking the credits from one on top of the credits from another. Indeed, in order to qualify for provincial SR&ED an Alberta company must first be eligible to receive Federal SR&ED. The federal tax credits provide a refundable credit for up to 35% of their eligible R&D expenditures (for Canadian Controlled Private Corporations, CCPCs), up to a maximum of \$3 million.

The Federal tax credits cover the following qualified expenditures:

- Salaries
- 80% of subcontracting costs (including contract R&D)
- Materials
- Overhead costs

Taken together the federal and Alberta credits allow an Alberta corporation engaged in commercial scientific research and development to claim refundable credits of up to \$1.45 million on their R&D expenses (10% of the total claimable federal amount of \$4 million, 35% of the provincial total claimable amount of \$3 million). Like the provincial credit, the federal one is highly important for startups and pre-revenue emerging technology companies.

The Alberta credits provide a powerful incentive for entrepreneurs involved in technological development to both incorporate in Alberta and conduct the bulk of their research and development within the province. The fact that the credit is combinable with the federal SR&ED tax credit provides an additional incentive. It also draws multinational enterprises to conduct R&D within the province and supports the contract R&D portion of the life sciences industry.

The Alberta SR&ED Investment Tax Credit promotes investment within the province. For \$100 paid by the Alberta Treasury to an SME for R&D work, the SME/entrepreneur has to have already invested at least \$1000 of eligible costs supporting R&D/innovation/new product development. It is reasonable to expect that the majority of the \$100 paid out by the Treasury is recovered from taxation of the \$1000 expended, and as such the credits are near-neutral on net cash. The economic activity plus the investment made in new wealth-generating companies is a benefit over and above the cash neutrality for Treasury.

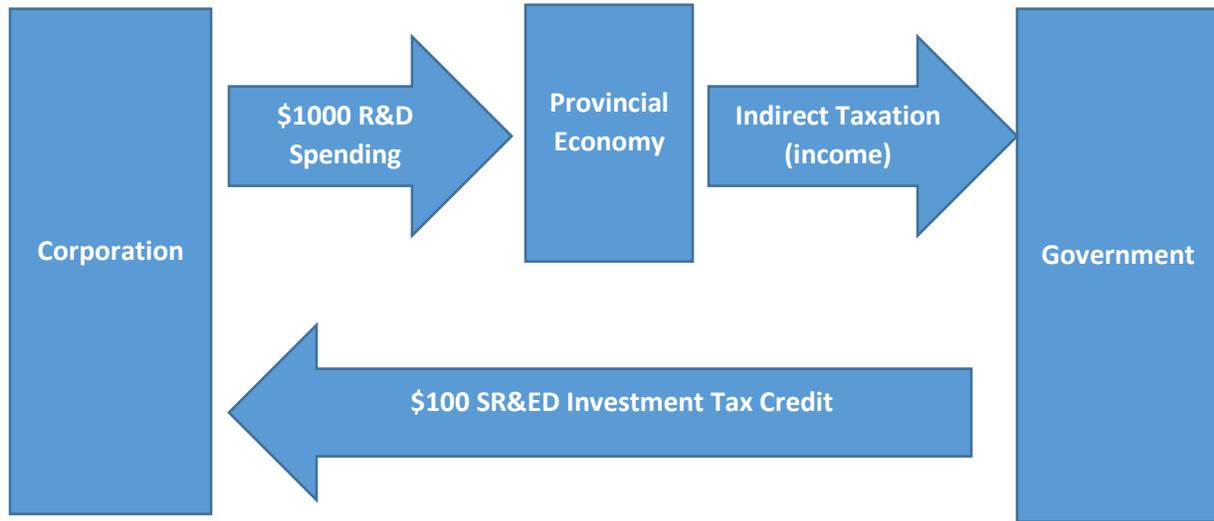


Figure 1: Illustrating the flow of dollars from corporations to government through both indirect taxation on R&D spending and refunds.

The provincial SR&ED tax credit creates a level playing field with other Canadian provinces, all of which offer their own R&D tax incentives (except for PEI). According to BioAlberta's Alberta Life Sciences State of the Industry 2015 Report, more than 60% of Alberta life science SMEs claim the provincial tax credit (see Table 2 following).

Province	R&D Tax Credit Rate
Alberta	10% refundable
British Columbia	10% refundable
Saskatchewan	10% non-refundable
Manitoba	20% refundable for corporations working with eligible Manitoba institutions
Ontario	10%
Quebec	14% of wages/salaries, increasable to 30% for corporations with <\$50,000,000 in assets
New Brunswick	15% (refundable)
Prince Edward Island	N/A
Nova Scotia	15% (refundable)
Newfoundland & Labrador	15% (refundable)

Table 1: R&D Tax Credit Rates by Province (Source: Canada Revenue Agency - Summary of provincial and territorial research & development (R&D) tax credits¹¹)

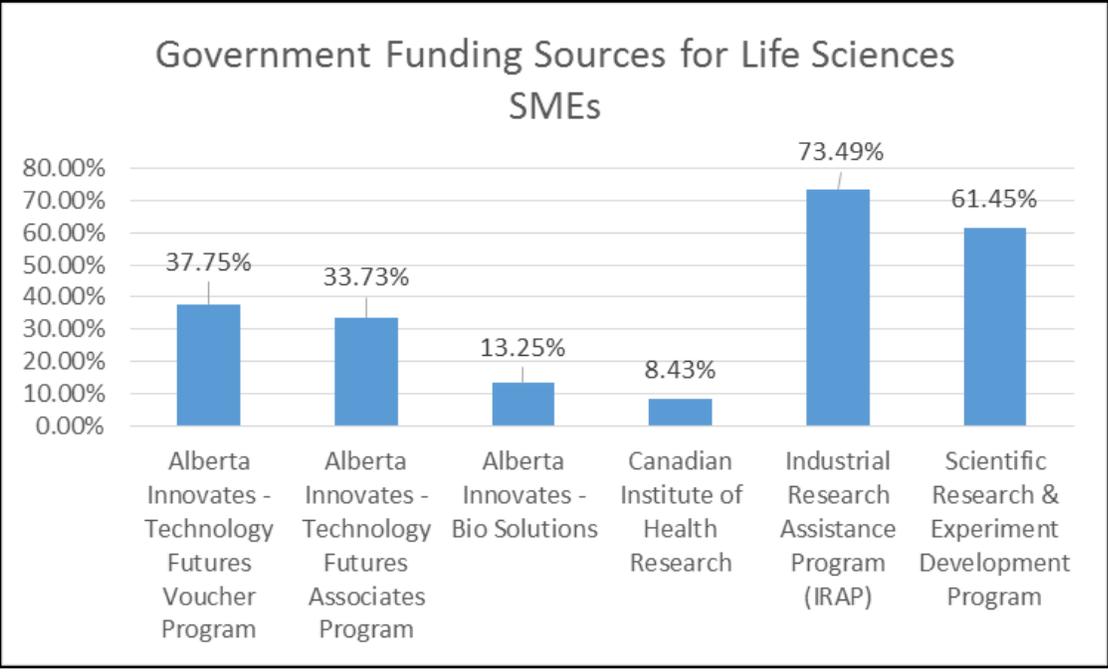


Table 2: SR&ED Investment Tax Credits, both provincial and federal, are the second most commonly accessed form of government support among Alberta SMEs after the National Research Council's Industrial Research Assistance Program (IRAP). (Source: BioAlberta/Deloitte 2015 State of the Industry Report.)

¹¹ Canada Revenue Agency - Summary of provincial and territorial research & development (R&D) tax credits (<http://www.cra-arc.gc.ca/txcrdt/sred-rsde/prv-crds-eng.html>)

QUÉBEC

Québec is home to a vibrant, growing life sciences industry. With three major centres of research and development in Montreal, Québec City, and Sherbrooke, the province hosts over 300 life sciences companies employing over 28,000 people. 20 international pharmaceutical companies have their headquarters in Québec. Health biotechnology and contract research are the core of the industry.¹² BioAlberta believes that Québec's example holds important lessons for Alberta in how to diversify a provincial economy through targeted research and development tax policies.

Québec's success in fostering the growth of biotechnology companies, both in attracting international ones and growing local startups, is attributable in large part to the forward-looking policies of the provincial government. Québec has created a complete biotechnology cluster, with support for research and innovation through to commercialization, from "bench to market"¹³. The government makes available substantial funds of money, often in partnership with major pharmaceutical companies, to sponsor industry-academic collaborations on R&D. New corporations are able to access loan guarantees, and equity development capital to fund their research and expansion.

A major part of Québec's success is due to their tax policies on research and development. Québec offers a refundable tax credit for wages paid in Québec. Where the corporation is legally resident in Québec and Canadian owned, the rate is 14% of wages and salaries, which increases to 30% for corporations with less than \$50 million in assets.¹⁴ The lower rates and recently implemented \$50K to \$225K Exclusion threshold for SR&ED expenditures in Québec makes the program significantly less interesting to SMEs and others (it significantly reduced the number of claims).

The success of the life sciences sector in the province is attributable in part both to these credits and the length of time they have been in place – in many cases since the 1980s – which provides a cumulative effect: companies are attracted to Québec and their presence attracts still other companies in the same and related fields.

BioAlberta acknowledges that an argument by analogy from Québec's successes in making the argument for using tax credits to promote life sciences growth is problematic: Québec's successes have primarily been in growing local pharmaceutical SMEs and attracting international ones. It is unlikely that a major pharmaceutical company would choose to move from Québec to Alberta, and any that are not yet resident would likely choose Québec to be closer to its pharma-specialized ecosystem.

While acknowledging the above argument, we believe Québec's example is still salient. Alberta's opportunity lies in novel technologies such as medical devices and specialty chemicals, areas which are underdeveloped in Québec. Targeted tax strategies and other smart policy initiatives can make Alberta into the home for medical technology and specialty chemicals in Canada, the way Québec is the home for pharmaceuticals.

¹² Biopolis Quebec – Quebec's Life Science Industry At A Glance (<http://www.quebeclifesciences.com/biopolisQuebec/contentQuebec.asp?p=svts>)

¹³ Investissement Quebec – Quebec's Life Science's Industry: The Right Fit (http://www.investquebec.com/documents/int/publications/BrochureSciences2014_en.pdf)

¹⁴ BDO – Tax Bulletin: The Tax Benefits of SR&ED (<http://www.bdo.ca/en/Library/Services/Tax/Documents/Tax-Bulletins/Tax-Benefits-of-SRED.PDF>) (p. 11)

SR&ED TAX CREDIT TESTIMONIALS

Below are six testimonials from Alberta life sciences executives on the importance of the Alberta SR&ED Investment Tax Credit to their operations. The interviewees describe their business operations and how the provincial investment tax credit makes a critical difference in their remaining based in Alberta.

TESTIMONIAL # 1 – NAEJA/FEDORA PHARMACEUTICALS INC.

Christopher G. Micetich, President and CEO

“We have been in the biotechnology/pharmaceutical industry since 1987, located in Edmonton, Alberta. We began as SynPhar Laboratories before acquiring our Japanese partner’s controlling interest and rolling the assets in Naeja Pharmaceuticals Inc. Naeja is a 100% privately controlled family-owned business. Recently, our newly created spin-off company, Fedora Pharmaceuticals Inc. (created to commercialize our beta-lactamase inhibitors, a crucial new weapon in the fight against antibiotic resistant bacteria) licensed a drug discovery program to Roche for US \$750 million plus royalties. Since 1987 we have employed over 1000 high skilled PhD’s recruited from around the world.

The provincial SR&ED credits have played an extremely important role in our success. Without them we would have very little incentive to maintain our operations in Alberta. It has always been very concerning to us when there is even the slightest rumour of them being reduced or discontinued. As a contract service provider, the SR&ED program has enabled us to offer competitive global prices at reduced rates and attract business from around the globe.

As contracts come and go, through difficult times, the SR&ED credits have also enabled us to carry highly skilled staff members until they could be placed into new projects. Through the good times when contracts are plentiful the credits have enabled us to fund our own drug discovery efforts. Fedora Pharmaceuticals’ recent success is a direct result of what we were able to do with our self-funded research effort. We now have two new self-supported research projects taking place within Naeja that we hope to see go to market within the next few years.

It is imperative that the SR&ED program not only continue but be increased. Although my family and the families of all our employees love living in Alberta and would not want to relocate, without the provincial credits it would not make sense for us to remain in Edmonton. It is a program that should be proudly supported and promoted to attract and retain business in our province.”

TESTIMONIAL # 2 – GROWSAFE SYSTEMS LTD.

Alison Sunstrum, CEO

“We are an advanced technology company specializing in agricultural IT. We develop Radio Frequency Identification (RFID) enabled automation and data collection solutions for the livestock industry. Our animal measurement, monitoring, and management platform continuously acquires data from both animals and their environment. The patented technology in our system offers an unprecedented, scientifically proven ability to monitor, in real-time, the health of production animals, predict their market value, and identify and automatically treat sick animals without human intervention. We have exported our products to the United States, Mexico, South America, Australia, and the EU.

SR&ED tax credits are the reason we have remained innovating in Alberta. We have successfully made SR&ED applications since the 1990s. In 2010 we were pitched heavily by the States of Missouri and Kansas to consider relocating our company to Kansas City, largely because of their animal health corridor initiative. We undertook an in-depth financial analysis comparing cross border tax, employee costs, etc. Even with the increased health care costs and corporate taxes on the US side of the border,

Alberta came up lacking in many respects. Without the S&RED incentive and our families in Canada we would have moved.”

TESTIMONIAL # 3 – SMILESONICA INC.

Cristian Scurtescu, Founder/President and CEO

We are a Canadian company that designs, develops, manufactures, and commercializes medical devices, advanced materials, and instrumentation for both medical and non-medical applications in Canada and throughout the world. Our flagship product is the Aevo System™ medical device. Approved for sale in Europe, the Aevo System™ enhances the physiological processes associated with orthodontic treatment. Regular use of the system during orthodontic treatment will facilitate faster tooth movement and decrease orthodontically induced tooth root resorption.

*For our company, SR&ED has provided us the largest amount of non-dilutive funding. We are using this program every year to improve our products and bring new ones to market. **SR&ED is extremely important for our company.***

TESTIMONIAL # 4 – TECHNOLOGY NORTH CORPORATION

Ling Huang, CEO

We are a health IT company developing collaborative software for educators and care providers to students with autism and other developmental disabilities. Our TN ActiveCare™ application uses mobile devices to quickly capture quantitative, evidence-based behavioral data. This reduces the amount of time that care providers have to spend inputting and processing pen and paper notes, enabling more responsive adjustments to education plans, as well as freeing up more time to spend directly with patients.

We have utilized SR&ED funding to offset our costs for developing the TN ActiveCare™ application, as well as continuing to refine and update it.

Going forward, we will not be able to hire new developers or retain our existing ones without SR&ED. The credit is vital for continuing our business and keeping high level development jobs in Alberta

TESTIMONIAL #5 – XORTX PHARMA CORP.

Allen Davidoff, President and CEO

We are a pharmaceutical company dedicated to developing cardiovascular medications for the treatment of rare diseases such as autosomal dominant polycystic kidney disease, hereditary hypouricemia, cystic fibrosis, as well as large market diseases such as hypertension, metabolic syndrome, diabetes, and diabetic nephropathy, thereby improving the quality of life and future health of patients.

In previous years XORTX has taken advantage of the SR&ED program. This program was invaluable to XORTX and has permitted essential funds to complete projects and support XORTX’s stability. I cannot emphasize enough how crucially this support is to our young company’s survival.

TESTIMONIAL #6 – SURFACE MEDICAL INC.

Fabrizio Chiacchia, President and CEO

We are a Canadian medical device company focused on developing products to address a \$48B problem that results in 100,000 deaths in North America each year: hospital acquired infections. Founded in 2010, we are dedicated to creating innovative products that reduce the transfer of infection and facilitate the safe administration of healthcare for the benefit of practitioners and patients alike. Our flagship products, CleanPatch™, is a Health Canada- and FDA-registered medical surface repair technology that helps reduce the risk of hospital acquired infections. In addition, our product reduces direct hospital costs and environmental waste by extending the life of hospital mattresses.

R&D is critical to develop our innovative products, that has resulted in the growth of our business. Without this investment, we would not be able to employ people locally, compete internationally, and become a leader in our field. Thanks to the SR&ED Investment Tax Credit we have been able to invest 30% more each year into R&D than we otherwise would have, reducing the time it has taken to bring our products to market.

HOW SR&ED TAX CREDITS FIT INTO DEVELOPMENT

SR&ED tax credits help Alberta life science companies at each stage of their development. Like other new technology ventures, life science companies can be described as developing through three stages: Startup, Growth, and Maturity. In Startup a company conducts its initial R&D and seeks investors to fund its primary discovery. In Growth a company seeks to conduct specific research and preparation to commercialize its discovery, and transitions from research to production. In the final stage, Maturity, a company pursues new R&D both to improve its initial product and to produce new ones in order to maintain its competitive position.

Startup: During the Startup stage a life science SME takes an initial discovery (often made in a provincial university before being spun out as a company) and seeks to validate its effectiveness. This may be a new drug which needs animal and human trials. It may be a medical device that needs engineering and other design work. It may also be a biotech product for the environmental, industrial, or agricultural sector which requires further validation and testing. Often this stage involves narrowing down a range of alternatives to a single product with both clinical and commercial potential.

During this stage funding is critical—companies need to hire staff, purchase equipment, rent offices, and hire subcontractors while conducting research and development. The refundable nature of the provincial tax credit makes it attractive to companies and to investors (angels and venture capitalists) looking to make their investments go further.

Growth: At Growth stage a company is scaling up to be able to take advantage of a market opportunity it has identified for its lead product or service. They are focused on growing their customer base and establishing a strong market position.

At this stage the SR&ED tax credit assists with product improvement and validation, as well as with the optimizing of manufacturing, product delivery, and other aspects of supply chain management. These innovations contribute to the profitability of the company and help it grow its market share, enabling it to eventually become a Mature company.

Maturity: Mature stage companies have an established market position with a range of successful products or services. They employ a large number of people and have extensive international connections to clients and partners.

Mature companies continue to engage in R&D work to maintain their competitive advantage, both to improve their main offering and to develop new products and services. The provincial SR&ED tax credit helps make an Alberta an attractive environment in which to make those R&D investments.

In summary, while the provincial SR&ED tax credit supports life sciences companies at all levels of their development they are critical for startup companies, the ones with the highest level of uncertainty in their commercial prospects.

CONCLUSIONS & RECOMMENDATIONS

Based on our review of the economic rationale for the SR&ED, testimonials from Alberta life science SMEs, as well as reviews of evidence about the performance of the federal complement to the provincial tax credit program, BioAlberta recommends the following:

- 1) **Extend the Alberta SR&ED Investment Tax Credit and, if possible, increase the incentive above 10%:** As shown in the previous sections of this discussion paper, the Alberta SR&ED Tax Credit is vital to the health and growth of the province's life sciences industry. It is utilized by a majority of companies (p. 8) and contributes to keeping high-level research and development jobs within the province (p. 10-12). For the future health of the life science industry it is vital that the credit be retained as part of Alberta's strategy for economic growth and diversification.

While the credit as currently implemented is a great boon to the life science industries, some additional changes to the way the credits are administered, including reporting requirements and eligibility criteria, could make them even more effective.

- 2) **Reduce the cost of compliance:** A study of the federal SR&ED tax credit by the Expert Panel of the Review of Federal Support to Research and Development found that applying companies faced significant compliance costs. On average, companies paid \$0.14 per dollar of credit claimed in administrative and compliance costs.¹⁵ This additional cost reduces the value of the credit. It is reasonable to believe that compliance costs for the Alberta credit are similar, as reporting and claiming conditions are similar—it being a condition of the Alberta credit that companies must already be eligible to receive federal SR&ED credits to receive the provincial one.

Most of these costs, particularly for small companies, are incurred by the need to hire accounting specialists to help with the preparation of SR&ED claims. To help companies with the burden of compliance, the federal expert panel recommended restructuring the credit to be claimable for a narrower base of expenditures (such as labour costs). The panel recommended that this narrower base be supplemented by an increase in the total percentage and amount claimable under the credit (up to 65%). This recommendation is based on the experience of other jurisdictions like the US, Japan, Australia, and Canada, which restrict capital costs from the base claimable for a credit.¹⁶

BioAlberta believes that this may be a worthwhile option to review for the provincial tax credit. Reducing the burden of compliance with the SR&ED tax credit would make the credit more readily available to SMEs which face challenges raising capital, especially for meeting administration costs.

BioAlberta believes that the SR&ED Investment Tax Credit is an extremely valuable tool that the provincial government can provide and possibly enhance to help knowledge-based companies assist with the diversification of Alberta.

¹⁵ Review of Federal Support to Research and Development Expert Panel – Assessing the Scientific Research and Experimental Development Tax Credit ([http://rd-review.ca/eic/site/033.nsf/vwapj/4_Assessing_the_SRED_Tax_Credit-eng.pdf/\\$FILE/4_Assessing_the_SRED_Tax_Credit-eng.pdf](http://rd-review.ca/eic/site/033.nsf/vwapj/4_Assessing_the_SRED_Tax_Credit-eng.pdf/$FILE/4_Assessing_the_SRED_Tax_Credit-eng.pdf)) (p. 8-9)

¹⁶ *Ibid.* (p. 10-11)

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APPENDIX 1: SUPPORT LETTER – ALBERTA CLEANTECH INDUSTRY ALLIANCE



July 2016

Innovation Collaborative of Alberta
c/o Dr. Steve Petrone, Acting Chair
1651 – 94 Street NW
Edmonton, AB
T6N 1E6

Re: Alberta's SR&ED Program

Dear Dr. Petrone,

The Alberta Clean Technology Innovation Alliance (ACTia) strongly affirms the value of the Federal & Provincial SR&ED program in supporting technology development and commercialization in Alberta.

Founded in 2011, ACTia is the only multi—stakeholder, province-wide and industry-focused CleanTech group in the Province. ACTia supports Albertans developing or deploying technologies that improve economic performance and reduce environmental footprint. The organization strives to be the leading voice for the Province's emerging cleantech industry, to foster local and global connections, and to accelerate the sector's growth and development, with an emphasis on Alberta's Small-to-Medium Sized Enterprises. We believe a concerted focus on CleanTech can help Alberta address its current environmental and competitiveness challenges, as well as to foster innovation and stimulate new opportunities for economic development within the Province.

Critical to the growth of the clean tech sector here is research, development and deployment of novel technologies. In each of those stages, the Alberta SR&ED Tax Credit has played an important role in sustaining and attracting investment within Alberta, both by small scale entrepreneurs seeking to launch innovations and by more-established companies looking to improve their offering or widen their portfolio of products and services.

Within our constituency, ACTia has heard strong expressions of support from the leaders of CleanTech companies who have benefitted from SR&ED credits in Alberta or others on behalf of leanTech companies that they work with, including:

- Alison Thompson, Borealis Geopower Inc. and Canadian Geothermal Energy Association

- Darryl Nelson, Nelson Environmental Remediation Ltd.
- Stuart Lomas, Luau Data Corporation
- Wayne Karpoff, Willowglen Systems
- Steve Petrone, Quantiam Technologies
- Brent Harris, Eguana Technologies
- Inder Pal Singh, SBI Fine Chemicals
- Keith Driver, High River Biochar ULC and BioPellets Ltd.
- Dan Madlung, BioComposites Group Inc.
- Lachlan (Lach) Whatley, MetalBoss Technologies Inc.
- Jaeson Cardiff, CleanO2 Carbon Capture Technologies Inc.
- Dave Russell, Russell NDE Systems Inc., and PICA Corp.
- Apoorv Sinha, zEroCor/Carbon Upcycling
- Jean Navert, BioForm Sewage Mining
- Randy Heaps, ISL Engineering and Land Services Ltd.
- Adrian Banica, Tropheus Ventures Ltd.
- Heather Campbell, Sustainable Development Technolog Corp.
- John Murphy, Nanotechnology Cluster of Alberta (nCa)

In closing, ACTia urges continued support of the SR&ED program by the Government of Alberta.

Sincerely,



Rus Matichuk
President
ACTia

APPENDIX 2: SUPPORT LETTER - AGRICULTURE & FOOD COUNCIL OF ALBERTA



July 6, 2016

Innovation Collaborative of Alberta
C/O Dr. Steve Petrone
Acting Chair
1651 – 94 Street
Edmonton AB
T6N 1E6

Dear Dr. Petrone,

RE: Alberta's Scientific Research & Experimental Development Investment Tax Credit Program

I am pleased to provide this letter in support of the key recommendations to renew the Alberta SR&ED Investment tax credit, and simplify the tax credit to reduce compliance costs as outlined in the 'Sustaining Life Sciences Innovation with SR&ED Investment Tax Credits' discussion paper from BioAlberta.

The SR&ED Investment Tax Credit program has been vital for many our member companies, in particular for those working in the functional ingredient and natural health products sector.

Without this program many small, medium enterprise would struggle to find the funds needed to invest in research in Alberta. This has led to new product and commercialization with our member companies.

We look forward to continually working with the Innovation Collaborative of Alberta.

Sincerely,

Bryanna Kumpula
Executive Director
Alberta Agriculture & Food Council

APPENDIX 3: SUPPORT LETTER - NANOCUSTER ALBERTA



July 2016

Innovation Collaborative of Alberta
C/O Dr. Steve Petrone
Acting Chair
1651 – 94 Street
Edmonton AB
T6N 1E6

Dear Dr. Petrone:

Subject: Letter of support for the Bio Alberta Sustaining Life Sciences Innovation With SR&ED Investment Tax Credits (discussion paper)

It is with great enthusiasm and sense of importance, that we at nanoCluster Alberta support the white paper and the important messages therein.

nanoCluster Alberta is a nascent association, formed to help the nano community throughout Alberta. Our members are primarily small- and medium-sized businesses that are involved in the cutting edge of advanced materials and devices, which typically involve a 'nano' or 'MEMS' technology. This effectively leverages business activities, university projects and nano-based Alberta facilities, which of course helps build the Alberta technology ecosystem.

At the very core of our members is research and development. I cannot overemphasize the important of the SR&ED tax credit to both the success and in some cases survival of Alberta companies - provided by these tax credits. Member testimonials have been sent separately.

As I write this letter, there are many Alberta 'nano' members who would be negatively affected if the recommendations of the 'discussion paper' are ignored. Nanotechnology products are becoming increasingly integrated into the health, forestry, agriculture, energy, clean tech sectors. Continued support of SR&ED will have an ongoing positive impact on the nano community and indeed on the ecosystem of the whole Alberta technology sector.

On behalf of the Board of Directors for nanoCluster Alberta, we applaud your leadership in this matter and trust the Alberta Government will support the small technology based businesses by providing continue support through the SR&ED program.

Sincerely,

A handwritten signature in black ink, appearing to read 'John Murphy', with a large, stylized flourish above the name.

John Murphy
Chairman of the Board
NanoCluster Alberta

APPENDIX 4: SUPPORT LETTER - TECHNOLOGY ALBERTA



July 2016

Steve Petrone Acting Chair
Innovation Collaborative of Alberta
1651 - 94 Street NW
Edmonton, Alberta
T6N 1E6

Dear Mr. Petrone:

Subject: Letter of support for the BioAlberta Sustaining Life Sciences Innovation With SR&ED Investment Tax Credits (discussion paper)

Technology Alberta is pleased to express its support of BioAlberta's discussion paper regarding the Alberta Scientific Research and Experimental Development (SR&ED) Tax Credit program. We echo BioAlberta's sentiments regarding the vital role the program plays in shaping our province's innovation ecosystem.

Technology Alberta represents Small and Medium-Sized Enterprises (SME) within the information and communications technology sector. Recognized as among the largest in Alberta, the sector is being increasingly relied upon as a key driver in the diversification of Alberta's economy.

The continued strength of Alberta's economy will be based on our collective ability to spark innovation across all of its sectors. But for many SMEs the pursuit of innovation involves tackling uncertainty, and this means absorbing risks that can be difficult to justify.

This is precisely why the SR&ED Tax Credit program is of vital importance to Alberta. Innovation must be incentivized to make it easier for companies to conduct targeted research and development activities that can lead to the commercialization of new products. The Government of Alberta has a direct role in this process by ensuring the SR&ED Tax Credit program remains available and responsive to the needs of all SMEs, regardless of sector.

Several Technology Alberta members under separate cover expressed their support of the SR&ED Tax Credit program and its importance to their operations. We encourage you to include their submissions in further outreaches you may have with the Province.

On behalf of the Technology Alberta Board of Directors and its members across Alberta, we applaud BioAlberta's efforts in helping to strengthen and ensure the sustainability of the Alberta SR&ED Tax Credit program through its discussion paper. We look forward to more opportunities to work collaboratively in strengthening Alberta's innovation ecosystem.

Sincerely,

A handwritten signature in black ink, appearing to read "Keith Gylander", with a long horizontal flourish extending to the left.

Keith Gylander,
Executive Director
Technology Alberta

APPENDIX 5: ADDITIONAL TESTIMONIALS

MICRALYNE

Mike Ciprick, CFO

“Micralyne is MEMS manufacturer based in Edmonton, Alberta. It was initially spun out of the University of Alberta in 1987 and today develops and manufactures innovative sensors, biomedical devices and 3D mechanical structures. We are a certified ISO 13485 supplier with over two decades of experience in developing leading-edge micro-machining solutions. Micralyne uses advanced processes and expertise in silicon, glass and other innovative technology platforms which provide customers both material flexibility and quality control necessary for demanding devices.

As a small technological company, we require every dollar spent in research and development to be stretched to create the best possible processes for our customer's products. The provincial SR&ED credits help to increase our R&D offering to our customers. This program assists Micralyne to expand our capabilities and offer world class designs that could not be afforded with this program. The flexibility of the program and wide range of R&D programs this applies to allows the company to hire and retain the best engineers and scientists required for products of this complexity. Thankfully these scientists and engineers are often hired as recent graduates of the University of Alberta.

This program is critical in allowing us to stay in Alberta and in utilizing the growing Nanocluster in the Edmonton region.”

EXTREME TELEMATICS CORP.

Mark Scantlebury, President & CEO

*“ETC is a Canadian electronic product design company that specializes in low power, wide temperature range, hazardous locations controls and sensors. Prior to using the SR&ED program we had a single artificial lift control product that was installed on remote gas well sites in Canada. We leveraged the SR&ED program starting in 2008 to help fund the development of new products, including an updated plunger lift controller and plunger arrival sensor that allowed ETC to gain more customers in Canada and to expand into the US and internationally. **Our revenues in 2015 were 4x the revenue we had in 2008 and our employee count went from 2 to 16 during this same time. This rate of growth would not have been possible without SR&ED and later on IRAP.**”*

BEAMDOG INC.

Trent Oster, CEO

“We are a video game development and publishing company developing entertainment for the world market. Our Beamdog platform allows us to sell our video game products directly to the consumer, worldwide. We've done extensive development work on bringing large scale video game concepts to Tablets and Phones, solving complex asset linking and asset size issues to bring big experiences to small devices.

We have utilized SR&ED funding to offset our costs for the Beamdog platform and our video game products, as well as continuing to refine and update all our products.

Going forward, we rely on SR&ED for our future technology development and future project development.

The credit is essential for the continuation of our business and creating and keeping senior development jobs in Alberta.”

SBI BIO ENERGY INC. / SBI FINE CHEMICALS INC.

Dr. Inder Pal Singh, CEO

“SBI Fine Chemicals started its business as AIMS Fine Chemicals in Alberta in 1998. SBI has been heavily involved in cutting edge research in the area of pharmaceuticals manufacturing technologies. SBI has been providing customized services to multinational pharmaceutical companies for their new drug development efforts globally on very competitive basis. SBI has hired and trained over 50 highly educated technical employees over the years.

SR&ED has played a key role in the success of SBI over the years and in providing training to fresh university graduates and new employees in various proprietary cutting edge continuous processing technologies for a better future. SBI Fine Chemicals has spun out SBI BioEnergy Inc. to commercialize its novel proprietary carbon negative renewable fuel technology for which it is in negotiation with various multinational oil refineries for bringing in an investment of over \$250 million and job opportunities for over 125 highly trained technical Albertans.

Without SR&ED tax credits conducting research and developing these world class ground breaking technologies wouldn't be possible. Non-dilutive SR&ED credit has been instrumental in maintaining ownership within Alberta and the enhanced potential for future income tax revenues for the province for years to come.”

QUANTIAM TECHNOLOGIES INC.

Dr. Steve Petrone, CEO & CTO

“Quantiam is a Nanotechnology and Cleantech company developing and commercializing world-first new products for the Chemical-Petrochemical, Oil & Gas - Oil Sands, Alternative Energy and CO2 Utilization, and Defence sectors. Its core areas of expertise are Advanced Materials, Catalysis, Surfaces and Coatings. Quantiam undertakes ~\$4M per year of R&D in Edmonton, Alberta with its global partners that to-date have included NOVA Chemicals, BASF SE, BASF Qtech, LyondellBasell with projects funded in part by CCEMC, Industry Canada-TPC, SDTC, NRC-IRAP, NSERC, AITF, the US Department of Energy and the US Department of Defense.

*Over its 17 year history, Quantiam has relied extensively on the Federal SR&ED program, and more recently the addition of the Alberta Provincial SR&ED program, to help justify and advance its R&D efforts. This world-class research has provided receptor capacity for local and international HQPs, advanced successful innovation and ultimately led to globally-funded commercialization. **Without the Alberta and Canadian SR&ED programs providing a stronger business case for undertaking its R&D in Alberta, it is highly likely Quantiam's R&D efforts would be relocated to other global jurisdictions with its international partners.**”*