

## **Management Discussion and Analysis of Financial Condition and Results of Operations (As of December 9, 2013)**

*This MD&A contains projections and other forward-looking statements regarding future events. Such statements are predictions, which may involve known and unknown risks, uncertainties and other factors, which could cause the actual events or results and company plans and objectives to differ materially from those expressed. For information concerning factors affecting the Company's business, the reader is referred to the documents that the Company files from time to time with applicable Canadian securities and regulatory authorities.*

This discussion and analysis of the results of operations of Quest PharmaTech Inc. (“Quest” or the “Company”) should be read in conjunction with the unaudited consolidated financial statements and accompanying notes for the three and nine months ended October 31, 2013 and the audited consolidated financial statements for the years ended January 31, 2013 and 2012. This discussion and analysis provides an update to the discussion and analysis prepared for the year ended January 31, 2013. The unaudited consolidated financial statements have been prepared in accordance with international financial reporting standard (“IFRS”) and have not been reviewed by the Company’s auditors. This discussion and analysis provides information on the operations of Quest on a consolidated basis. All amounts are expressed in Canadian dollars unless otherwise noted and references to the term “year” refer to the fiscal year ended January 31<sup>st</sup>. Additional information related to the Company is on SEDAR at [www.sedar.com](http://www.sedar.com).

### **2013 Development Highlights:**

**Continued progress with the Phase IIb multicentre study for the treatment of advanced ovarian cancer with 13 active centres in Italy and the U.S., Quest is approaching full enrollment of this clinical study.**

**Received \$2,050,000 of clinical development funding under the Company’s investment financing agreements.**

**Made a presentation regarding Quest’s anti-MUC1 IgE technology at the 28<sup>th</sup> Annual Meeting of the Society for Immunotherapy of Cancer in Maryland, U.S.**

**Announced a \$1,000,000 private placement of 10,000,000 units at \$0.10 per unit. Each unit is comprised of one common share and one warrant. Each warrant is exercisable into one common share at \$0.15 per common share. The warrants carry a two year expiry.**

### **Overview**

Quest is committed to building shareholder value through the discovery, development and commercialization of new pharmaceutical products. It is developing a portfolio of product candidates for the treatment of cancer by combining immunotherapeutic antibodies with chemotherapy, photodynamic therapy, radioimmunotherapy or immunoadjuvants. Quest is also developing a series of products for the treatment of cancer and dermatological conditions, based on the Company’s SonoLight Technology platform.

## **Products under Development - Proprietary Technology:**

Quest is developing high affinity monoclonal antibodies targeting certain tumour associated antigens that are presented in various cancers including ovary, pancreas, lung, breast, prostate and stomach. Quest believes that it can apply its portfolio of antibody oncology product candidates to prolong, amplify and shape anti-tumour immune responses to increase the clinical benefits of its proprietary antibodies for the treatment of cancer. The following modalities are critical to that approach:

**Chemo Enhanced Immuno-Therapy** – combining antibodies with chemotherapy can potentially further complement and enhance the treatment outcome compared to antibody treatment alone.

**Combination Therapy** – combining antibodies with a booster compound (adjuvant) that improves the immune system's response – compared to antibody treatment alone - can potentially complement and enhance the therapeutic outcome.

**SonoLight Technology** – is based on a unique non-toxic family of photosensitizing and sonosensitizing, small molecular weight compounds called Hypocrellin, isolated from a parasitic fungus that grows on bamboo trees in China. Quest's products are expected to offer high selectivity and efficacy with minimal side effects. Quest is also developing these compounds as an adjuvant to cancer immunotherapy.

## **Current Clinical Programs:**

### **Antibody Immunotherapy**

Quest is developing the high affinity monoclonal antibody Oregovomab (MAb B43.13) for the treatment of ovarian cancer. Oregovomab targets the circulating tumour-associated antigen CA125, which is shed from the surface of human epithelial ovarian cancer cells; the antibodies induce broad cellular and humoral immune responses against CA125 via complex formation. Clinical testing conducted to date has shown that front-line carboplatin-paclitaxel administered in combination with Oregovomab immunotherapy results in more vigorous immune response to the immunization than observed with Oregovomab in the post front-line mono-immunotherapy maintenance setting. There is a growing appreciation in the cancer immunotherapy community that cytotoxic therapy can provide the immune system better access to injured cells and also dampen the immune suppressive pathways that serve to turn off immune reactions. The Company believes further clinical trials are warranted with Oregovomab in combination with front-line chemotherapy for the treatment of ovarian cancer.

### **Clinical Trial Strategy**

Taking advantage of the availability of clinical grade Oregovomab (anti CA125 antibody), Quest is conducting one and is planning to conduct two other proof-of-concept clinical trials to

establish these principles to ultimately lead to the design of a definitive combinatorial product registration.

An 80 patient multicentre Italian and U.S. cooperative trial to establish evidence for the clinical benefit associated with enhanced specific T cell immunity achievable by combining Oregovomab with carboplatin and paclitaxel in the initial treatment of advanced ovarian cancer (front-line).

A 30 patient clinical trial to evaluate the ability of an immuno-adjuvant, to enhance the strength of the Oregovomab immune response with front-line chemotherapy generated in advanced ovarian cancer patients.

A 30 patient U.S. trial will use gemcitabine, another cytotoxic agent, with neoadjuvant immunotherapy in a cohort of patients with CA125 associated partially resectable pancreatic cancer.

One of the endpoints in all the three clinical trials is the induction of CA125 specific T cells as measured by a well validated ELISPOT assay. Since, CA125 specific T cells induction has been correlated with progression free survival and overall survival in our previous 40 patient Oregovomab combination therapy clinical trial, we are hoping to use this assay as a surrogate marker to get expedited product approval.

## **Product Pipeline**

Quest's pipeline of product candidates consists of four other monoclonal antibodies targeting certain tumour antigens that are presented in a variety of cancers including such cancers as breast, lung, pancreas, stomach and, prostate etc. Quest already has in its possession proprietary antibodies against MUC1, PSA, CA19.9 and TAGG72. These antibodies in the platform will undergo continuing preclinical development in anticipation of rapid clinical development, once the initial Oregovomab studies establish the validity of the proof-of-concept. It is noted that a Phase I clinical trial with anti-MUC1 antibody in 17 patients with metastatic cancer, including multiple myeloma, demonstrated the activation of anti-tumour immunity in those patients.

## **Monoclonal IgE for Solid Tumor Immunotherapy**

The immunoglobulin E (IgE) is a class of antibody that is capable of triggering a robust immune response resulting in anaphylaxis, which plays a central role in allergic reactions against environmental agents and immunity against parasites. Multiple studies also suggest that IgE also plays a role in cancer immunosurveillance. For example, relevant epidemiological studies on the association of allergies with cancer support a lower cancer risk among people with a history of allergies. Antibodies of IgE class isolated from pancreatic cancer were shown to mediate cytotoxicity against targeted cancer cells. In addition, levels of polyclonal IgE directly correlated with the overall survival in patients with multiple myeloma. All these observations imply that this class of antibody can be exploited for the treatment of cancer to complement the IgG class that has traditionally been developed for cancer therapy.

IgE also has several intrinsic advantages that may increase its therapeutic potential compared to IgG including the exceptionally high affinity for its Fc receptors and its low serum concentration

that provide less competition to effector cells involved in tumor killing mechanism. Interestingly, IgE binds cells in tissue as well as in circulation and will home to tumor stroma. Antitumor effects of IgE have been reported in several model system in the literature and at Advanced Immune Therapeutics, Inc., a company (AIT) founded by Dr. Christopher Nicodemus, M.D. FACP from whom Quest recently acquired this technology.

Proprietary research done at AIT has established that IgE is capable of inducing potent cross presentation of tumor antigens allowing strong cellular immunity to form against targeted tumor antigens. Additionally, by mobilizing potent direct cellular cytotoxic effectors mechanisms of the allergic inflammatory response, carefully targeted IgE monoclonal antibodies are capable of directly attacking cancer cells including solid tumors. These effects are both induced at concentrations which are lower than required for monoclonal IgGs currently in clinical use. Safe administration of this class of monoclonal antibody has also been demonstrated in primates. The collaboration of AIT with Professor Manuel Penichet of UCLA has also led to some proprietary rights to this technology for Quest.

Quest is in the process of initiating a preclinical program to identify a lead product candidate that may be advanced to clinical trial for the treatment of solid malignancy.

## **SonoLight Technology**

**SonoLight Technology for Dermatology Applications:** The Company's lead product, SL017, is a topical formulation indicated for dermatology applications. Recently the Company made a strategic decision to focus its development efforts towards oncology and is therefore looking to out-license its dermatology pipeline of products.

**SonoLight Technology for Oncology Applications:** A second product from the SonoLight platform, SL052, is an injectable formulation that has received approval from Health Canada's Therapeutic Product Division to initiate a Phase I clinical trial for the treatment of prostate cancer. The clinical trial will be conducted in two stages. The first stage of the study will evaluate the prostate gland distribution of SL052 in up to six subjects undergoing radical prostatectomy. In the second stage of the study, the safety and preliminary efficacy of SL052 PDT treatment with light dose escalation will be studied in 12 subjects with localized prostate cancer. The treatment response will be monitored by MRI, prostate biopsy and changes in baseline PSA levels. The animal studies completed at the Cross Cancer Institute in Edmonton, Alberta, indicate that SL052 has the potential to destroy cancerous tumours in the prostate while limiting collateral damage to healthy tissue.



compared to \$373,059 and \$1,261,553, respectively, for the three and nine months ended October 31, 2012.

**Revenues:**

The Company had no reported revenue for the three and nine month periods ended October 31, 2013 and 2012.

**Expenses**

The following table identifies the changes in general and administrative expense for the three and nine months ended October 31, 2013 compared to the three and nine months ended October 31, 2012.

General and administrative expenses	For the three months ended Oct 31			For the nine months ended Oct 31		
	2013	2012	Increase (decrease)	2013	2012	Increase (decrease)
	\$	\$	\$	\$	\$	\$
Salaries, wages and benefits	68,424	69,176	(752)	210,116	213,671	(3,555)
Professional fees	6,307	12,507	(6,200)	12,358	29,247	(16,889)
Other support costs	7,951	14,549	(6,598)	77,898	69,321	8,577
Travel	12,445	8,984	3,461	50,117	36,024	14,093
Consulting	12,500	12,500	-	37,500	37,500	-
Rent	3,625	3,820	(195)	13,226	12,776	450
Insurance	4,158	4,161	(3)	12,477	12,296	181
Public company related costs	14,385	23,376	(8,991)	26,392	54,164	(27,772)
Depreciation	358	430	(72)	1,074	1,238	(164)
Total general and administrative expenses	130,153	149,503	(19,350)	441,158	466,237	(25,079)

Overall, general and administrative costs have decreased during the nine months ended October 31, 2013 compared to the nine months ended October 31, 2012, primarily due to a decrease in public company related costs.

The following table identifies the changes in research and development (R&D) expense for the three and nine months ended October 31, 2013 compared to the three and nine months ended October 31, 2012.

Research and development expenses	For the three months ended Oct 31			For the nine months ended Oct 31		
	2013	2012	Increase (decrease)	2013	2012	Increase (decrease)
	\$	\$	\$	\$	\$	\$
Sub-contract, consulting and clinical trials	197,368	103,547	93,821	610,665	283,512	327,153
Salaries, wages and benefits	34,837	32,716	2,121	98,196	103,489	(5,293)
Legal (patent prosecution)	83,575	22,065	61,510	139,256	46,508	92,748
Rent	8,459	8,913	(454)	30,861	30,909	(48)
Other R&D costs	37,893	49,470	(11,577)	101,403	83,683	17,720
Supplies	709	288	421	2,331	3,029	(698)
Depreciation	9,930	27,208	(17,278)	31,628	78,860	(47,232)
<b>Gross research and development expenses</b>	<b>372,771</b>	<b>244,207</b>	<b>128,564</b>	<b>1,014,340</b>	<b>629,990</b>	<b>384,350</b>
Less						
Alberta Finance – SR&ED tax credits	-	-	-	-	(23,049)	(23,049)
<b>Research and development expense (net)</b>	<b>372,771</b>	<b>244,207</b>	<b>128,564</b>	<b>1,014,340</b>	<b>606,941</b>	<b>407,399</b>

Overall, R&D costs have increased in 2013 compared to 2012 due to an increase in sub-contract, consulting and clinical trial costs and an increase in legal patent prosecution costs. Sub-contract, consulting and clinical trial costs increased due to an increase in activity for the Company's clinical trial programs. Legal (patent prosecution costs) increased due to an increase in patent activity related to the Company's Immunotherapy and IgE technologies.

### Summary of Quarterly Results

The following table presents unaudited selected financial information for each of the last eight quarters ended October 31, 2013.

	Q3, fiscal 2014	Q2, fiscal 2014	Q1, fiscal 2014	Q4, fiscal 2013	Q3, fiscal 2013	Q2, fiscal 2013	Q1, fiscal 2013	Q4, fiscal 2012
	\$	\$	\$	\$	\$	\$	\$	\$
Revenue	-	-	-	-	-	-	-	-
Net income (loss) for the period	(525,227)	(640,126)	(375,390)	(454,713)	(432,140)	(433,923)	(309,391)	(592,311)
Basic and diluted income (loss) per share (1)	(0.006)	(0.008)	(0.004)	(0.005)	(0.005)	(0.005)	(0.004)	(0.007)

(1) Quarterly losses per share are not additive and may not equal annual loss per share reported. This is due to the effect of shares issued during the year on the weighted average number of shares outstanding for the full year.

### **Share-Based Payment Transactions**

During the three and nine months ended October 31, 2013, the Company granted a total of 25,000 and 2,475,000 (2012 – 975,000 and 1,915,000) share options, respectively, as per the Company's Share Option Plan. In 2013, 425,000 options were granted to non-employees and 2,050,000 were granted to employees at exercise prices ranging from \$0.10 to \$0.15 per share. By October 31, 2013, all of the 2013 options had vested. In 2012, 940,000 options were granted to employees and 975,000 options to non-employees, all at an exercise price of \$0.10 per share and all vesting immediately. The fair value of the vested options, totaling \$6,750 and \$76,250, respectively, was recognized as an expense and credited to contributed surplus for the three and nine months ended October 31, 2013 (2012 – \$48,750 and \$86,350, respectively).

### **Intangible Assets**

Intangible assets include proprietary rights, intellectual property and patent rights which have been acquired from third parties. Intangible assets are recorded at cost less accumulated amortization. The Company evaluates the recoverability of the carrying cost of proprietary rights and intellectual property each quarter and if the rights and intellectual property are not considered to be fully recoverable, a provision is recorded to recognize them at fair value. For the three month period ended October 31, 2013, no provision for impairment in value has been recorded.

### **Capital Expenditures**

Expenditures on capital assets were \$3,620 for the nine months ended October 31, 2013 (2012 – \$4,906).

### **Outstanding Share Data**

The Company has the following securities outstanding as at December 9, 2013:

Common shares issued and outstanding at October 31, 2013	91,697,580
Share options outstanding as at October 31, 2013	9,340,000
Warrants outstanding as at October 31, 2013	-
Share options granted since October 31, 2013	-
Share options expired since October 31, 2013	-

Fully diluted common shares are 101,037,580, assuming the exercise of all share options.

### **Financial Instruments**

**Fair Value** - Given their short-term maturity, the fair value of cash and cash equivalents, accounts receivable, accounts payable and accrued liabilities approximate the carrying value. The fair values of the Company's financial instruments are measured using a Level 1 classification (quoted prices in active markets).

**Foreign Currency Risk** - The Company has assets and liabilities that are denominated in foreign currencies and that are exposed to the financial risk of earnings fluctuation arising from changes in foreign exchange rates and the degree of volatility of those rates. The Company does

not consider its exposure to foreign currency risk to be significant and currently does not use derivative instruments to reduce its exposure to foreign currency risk.

**Liquidity Risk** - Company's exposure to liquidity risk is dependent on its ability to raise funds to meet its commitments and sustain its operations. The Company controls liquidity risk by managing its working capital and by securing additional funds through equity, debt or partnering transactions.

**Credit Risk** - Financial instruments that subject the Company to credit risk consist primarily of cash and cash equivalents and accounts receivable. To minimize its exposure to credit risk for cash equivalents, the Company invests surplus cash in fully guaranteed short term deposits with its financial banker, a major Canadian bank. As the Company is primarily involved in research and development, the Company's exposure to credit risk related to accounts receivable is not considered to be significant. At October 31, 2013, 100% of accounts receivable were due from one organization under a federal government program.

**Interest Rate Risk** - Interest rate risk is the risk that the fair value of future cash flows of a financial instrument will fluctuate because of changes in market interest rates. Financial assets and financial liabilities with variable interest rates expose the Company to cash flow interest rate risk. The Company's cash and cash equivalents are comprised of highly liquid deposits or investments that earn interest at market rates. Interest on the long-term debt is at fixed rates. Consequently, the Company is exposed to fair value changes on long-term debt when the market rate of interest changes. Accounts receivable, accounts payable and accrued liabilities bear no interest. The Company manages its interest rate risk by maximizing the interest earned on excess funds while maintaining the liquidity necessary to conduct operations on a day-to-day basis.

### **Liquidity and Capital Resources**

The Company's ability to continue as a going concern is uncertain and is dependent upon its ability to raise additional capital to successfully complete its research and development programs, commercialize its technologies, conduct clinical trials and receive regulatory approval for its products.

At October 31, 2013 cash and cash equivalents were \$239,850 as compared to \$56,636 at January 31, 2013. At December 9, 2013, the Company had cash and cash equivalents of approximately \$225,000.

Cash used in operating activities was \$440,060 and \$1,463,168, respectively, for the three and nine months ended October 31, 2013 compared to \$373,059 and \$1,261,553, respectively, for the three and nine months ended October 31, 2012.

During the three months ended July 31, 2013, the Company made a \$400,000 principal payment on the convertible debenture which is now repaid in full.

Commencing in February, 2010, the Company secured demand loan financing of up to \$1,000,000 from one of its officers. This demand loan financing bears interest at 8% per annum, interest payable monthly and is unsecured with principal repayment to be made 30 days after

demand. The principal is to be repaid upon the Company receiving sufficient future licensing fees, equity financing or other revenues. To date, the Company owes \$680,000 on this demand loan financing.

In March and May, 2011, the Company secured additional demand loan financing of \$100,000 from an independent director of the Company. This demand loan financing bears interest at 8% per annum, interest payable monthly and is unsecured with principal repayment to be made 30 days after demand.

As at October 31, 2013, the Company had secured demand loan financing of \$90,000 from an officer of the Company. This demand loan financing bears interest at 8% per annum, interest payable monthly and is unsecured with principal repayment to be made 30 days after demand.

During the nine month period ended October 31, 2013, the Company received \$2,050,000 under its investment financing agreements.

In November, 2013, the Company announced a \$1,000,000 private placement of 10,000,000 units at \$0.10 per unit. Each unit is comprised of one common share and one warrant. Each warrant is exercisable into one common share at \$0.15 per common share. The warrants carry a two year expiry.

The Company continues to implement a disciplined approach to containing costs and is focusing on programs aimed at achieving near-term goals.

Quest's funding needs will vary as its drug development products move into and through clinical trials. Based on current operating budgets, management believes that the capital resources of the Company should be sufficient to fund operations into the second quarter of fiscal 2015.

The Company will seek additional capital through the sale of the remaining non-core assets, further equity financings, licensing arrangements involving its core technologies and strategic partnerships.

### **Demand Loans and Related Party Transactions**

During fiscal 2011, the Company entered into a demand loan agreement with Dr. Ragupathy Madiyalakan, CEO and a director of the Company, to provide up to \$1,000,000 in 8% annual interest bearing demand loan financing to be used for the Company's operating expenditures. This financing is unsecured, with principal repayment to be made 30 days after demand, interest payable monthly. The principal is to be repaid upon the Company receiving sufficient future licensing fees, equity financing or other revenues. As at October 31, 2013, the Company owed \$680,000 on this financing through a wholly-owned company of Dr. Madiyalakan.

During April and May, 2011, the Company received demand loan financing of \$100,000 from Mr. Ian McConnan, an independent director of the Company. The loan is 8% annual interest bearing, unsecured with principal payable 30 days after demand and interest payable monthly.

As at October 31, 2013, the Company had demand loan financing of \$90,000 from Mr. Thomas Woo, an officer of the Company. This financing is unsecured, with principal repayment to be made 30 days after demand, and with 8% annual interest payable monthly.

### **Disclosure Controls and Procedures**

The management of Quest is responsible for establishing and maintaining disclosure controls and procedures for the Company and is continuing with the implementation of disclosure controls and procedures, to provide reasonable assurance that material information relating to the Company, including its consolidated subsidiaries, is made known to Quest management particularly during the period in which the annual filings are being prepared.

### **Internal Control Over Financial Reporting**

The Company's management is responsible for establishing and maintaining adequate internal control over financial reporting. Management has taken steps to improve the procedures and provide maintenance related to an effective design for the Company's internal controls and procedures over financial reporting.

Management continues to note weaknesses in internal controls over financial reporting including those related to the limited number of accounting staff members resulting in a lack of segregation of duties.

Management will continue with the implementation of procedures aimed at minimizing the risk of material error in its financial reporting and will seek outside expertise when the need arises.

### **Risks and Uncertainties**

Going concern uncertainty - The Company's financial statements have been prepared on a going concern basis which presumes the realization of assets and discharge of liabilities in the normal course of business for the foreseeable future. The Company has experienced significant operating losses and cash outflows from operations since its inception. The Company's ability to continue as a going concern is uncertain and is dependent upon its ability to raise additional capital to successfully complete its research and development programs, commercialize its technologies and conduct clinical trials and receive regulatory approvals for its products. It is not possible at this time to predict the outcome of these matters.

Quest's proprietary technologies are in various stages of development and some technologies have not received regulatory approval to begin clinical trials. It will be necessary for the Company to produce sufficient preclinical data in order to receive regulatory approval to begin clinical trials. There is no assurance that regulatory approval will be received to begin clinical trials. For the proprietary technologies that have received regulatory approval to begin clinical trials, future success will depend upon the ability of the Company to move the products through clinical trials, the effect and safety of these products, the timing and cost to receive regulatory and marketing approvals and the filing and maintenance of patent claims.

Quest's proprietary technologies have exposure to risks associated with commercialization. Even after product approval is obtained, there is no assurance that the Company will have a sufficient market for its products or the working capital required for commercialization.

The Company maintains clinical trial liability and product liability insurance; however, it is possible that this coverage may not provide full protection against all risks.

The Company may be exposed to risks associated with malfunctioning equipment, catastrophic events and other events within and outside of the Company's control. The Company maintains insurance believed to be adequate to cover any eventuality, but there is no guarantee that coverage will be sufficient for all purposes.

To a large degree, the Company's success is dependent upon attracting and retaining key management and scientific personnel to further the Company's drug development programs. There is a risk that required personnel may not be available to the Company when needed and, as a result, this may have a negative impact on the Company.

Quest must continue to raise additional capital by issuing new share capital through equity financing, licensing arrangements and/or strategic partnerships. The Company's ability to raise additional capital will depend upon the progress of moving its drug development products into and through clinical trials and the strength of the equity markets, which are uncertain. There can be no assurance that additional capital will be available.