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**ARCH BIOPARTNERS INC.**

**MANAGEMENT DISCUSSION AND ANALYSIS:**

**FOR THE QUARTER ENDED JUNE 30, 2015**

**DATED AUGUST 31, 2015**

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The following Management Discussion and Analysis (“MD&A”) should be read in conjunction with Arch Biopartners Inc’s (the “Company”) unaudited condensed interim consolidated financial statements and related notes for the three months ended June 30, 2015 which were prepared in accordance with International Financial Reporting Standards (“IFRS”).

The unaudited condensed interim consolidated financial statements have been prepared in accordance with IFRS applicable to a going concern that contemplates the realization of assets and the payment of liabilities in the ordinary course of business. Accordingly, they do not give effect to adjustments that would be necessary should the Company be unable to continue as a going concern. In other than the normal course of business, the Company may be required to realize its assets and liquidate its liabilities and commitments at amounts different from those in the accompanying consolidated financial statements. The Company's viability as a going concern is dependent upon its ability to obtain adequate financing, the on-going support of its shareholders, affiliates and any creditors, and to achieve profitable levels of operation. It is not possible to predict whether financing efforts shall be successful or if the Company will attain profitable levels of operations.

These financial statements, along with additional information relating to Arch Biopartners Inc, may be found on SEDAR at [www.SEDAR.com](http://www.SEDAR.com).

## **Disclosure Regarding Forward-Looking Statements**

This Management Discussion and Analysis contains forward-looking statements that involve various risks and uncertainties, including, without limitation, statements regarding the future plans and objectives of the Company. There can be no assurance that such statements will prove to be accurate. Actual results and future events could differ materially from those anticipated in such statements. These and all subsequent written and oral forward-looking statements are based on the estimates and opinions of management on the dates they are made and are expressly qualified in their entirety by this notice. The Company assumes no obligation to update forward-looking statements should circumstances or management's estimates or opinions change; however, these risks may be detailed from time to time in Arch Biopartners Inc.'s public disclosures.

Arch Biopartners Inc.  
Management Discussion and Analysis  
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## **ITEM 1 - Overview**

### **Company Profile**

Arch Biopartners Inc (the “Company”) is a portfolio based biotechnology company established to develop new products and technology for unmet medical needs.

At present, the Company has five technology platforms in its portfolio under development (each within its own subsidiary):

- **MetaMx™** - proprietary synthetic molecules that target brain tumor initiating cells and invasive glioma cells;
- **AB569** – a new drug candidate for the treatment of *Pseudomonas aeruginosa* infections in the respiratory tracts of patients with Cystic Fibrosis;
- **MetaBlok™** - a new drug candidate for the potential treatment of sepsis and cancer metastasis;
- **Borg: Peptide-Solid Surface Interface** - Binding of proprietary peptides to various plastic and metal surfaces to inhibit biofilm formation and reduce corrosion; and,
- **Arch Inflammation** - Novel treatments for chronic kidney and bowel diseases caused by non-infectious inflammation.

Continuing product development work is ongoing at various third party facilities. The Company owns the intellectual property (“IP”) emanating from the programs listed above. Both the University of Alberta and the University of Calgary became shareholders of the Company in return for their rights to future revenue from certain IP upon formation of Arch Biopartners in May, 2010.

### **Formation of Arch Biopartners**

Arch Biopartners Inc. is incorporated under the Business Corporation Act (Ontario) with continuance under the Canadian Business Corporations Act. On May 7, 2010, the Company was restructured into a biotechnology firm following a reverse take over transaction (“RTO”) involving three private Canadian biotechnology firms: Arch Biotech Inc, Arch Biophysics Ltd. and Arch Cancer Therapeutics Ltd. These companies continue to operate as separate, 100% owned subsidiaries of the Company.

The listing of the Company’s common shares moved from the Canadian Securities Exchange (“CSE”) to the TSX Venture Exchange (“TSXV”) on February 23, 2015 under the ticker “ACH”.

The Company had 47,360,179 Common Shares outstanding as of May 7, 2010. As of the date hereinabove, the Company has 53,189,679 common shares outstanding. Please see ITEM 13 below for more information on the Company's outstanding shares, warrants and options.

## **Arch Biopartners' Technology Overview**

### **I. MetaMx™**

Arch Cancer Therapeutics Ltd. ("ACT"), was incorporated under the Alberta Business Corporations Act ("ABCA") on November 19, 2009, to hold legal and beneficial title to the intellectual property produced by Dr. Stephen Robbins, Dr. Donna Senger and Jennifer Rahn of the University of Calgary in connection with a project specializing in brain tumours. The assets of Arch Cancer Therapeutics Ltd. presently consist of patents issued by the United States Patent and Trademarks Office and patent applications filed with various Patent Cooperation Treaty ("PCT") countries.

ACT's objective is to develop non-invasive imaging, diagnostic and therapeutic molecules for brain cancer. These molecules, collectively known as "MetaMx™", are specialized peptides proprietary to ACT that target and identify brain tumour initiating cells ("BTICs") and invasive brain cancer cells that are not normally seen using current state of the art diagnostic imaging techniques.

The Company intends to develop MetaMx™ as a diagnostic and targeted therapeutic agent to meet significant unmet medical needs in the diagnosis and treatment of malignant gliomas of the brain.

Malignant gliomas have a dismal prognosis with a median survival of only 1 year and "long-term survivors" (i.e. surviving  $\geq 3$  years) are rare. Presently, there are several barriers to the effective treatment of malignant glioma. They are very difficult to remove surgically as they are highly invasive, moving into the surrounding normal brain. They extend tendrils several centimetres from the main tumour mass and disseminate as single cells with low proliferative activity; this results in resistance to radiotherapy/chemotherapy. A potential new "disease reservoir" is based on the BTIC hypothesis, which puts forth that malignant gliomas are maintained by cells with stem cell-like properties (BTICs) which form a resistant population of cells that are not killed by conventional therapies. These cells have an ability to self-renew and efficiently form tumours in mouse models.

In August 2012, Arch Biopartners announced Arch scientists successfully used MetaMx™ for magnetic resonance imaging ("MRI") to detect human BTICs in mice. ACT scientists previously imaged BTICs using fluorescent-based version of the MetaMx technology. Prior to these achievements, BTICs were not visible in live animals using current diagnostic imaging techniques.

ACT scientists have confirmed that MetaMx™ targets BTICs with a high level of specificity. The MetaMx platform may be adapted to make therapeutic products to destroy BTICs and other brain cancer cells.

Arch Biopartners worked with d3 Medicine in the second half of 2014 to draft a clinical development plan for MetaMx™. Arch intends to perform a single dose imaging human trial to characterize the safety and pharmacokinetics of MetaMx and to demonstrate the efficacy of MetaMx to cross the human blood brain barrier and detect brain tumor initiating cells (BTICs) and invasive glioma cells. Such results in human patients will increase the value of MetaMx not only as a diagnostic and imaging tool but also as a potential drug delivery platform to destroy BTICs and invasive glioma cells.

Arch has since arranged for the formulation and dual manufacturing of MetaMx under Good Manufacturing Practice (“GMP”) and Good Laboratory Practice (“GLP”) standards by a second U.S. chemistry manufacturer. The manufacturer’s prototype formulation of MetaMx will undergo quality control and pre-clinical validation prior to Arch proceeding with the large scale and more costly GMP/GLP manufacturing order.

MetaMx produced under GLP will be used for a planned three-month toxicology program. MetaMx produced under GMP will be used for the single dose, diagnostic imaging trial in humans.

Following results of the toxicology studies, Arch intends to request a pre-Investigational New Drug application meeting with the Food and Drug Administration.

## **II. AB569**

Arch has identified AB569 as a new candidate drug to treat *Pseudomonas aeruginosa* (*P. aeruginosa*) respiratory infections. This new drug is the result of development work performed during 2014 and early 2015 by Dr. Daniel Hassett at the University of Cincinnati (“UC”).

Arch management believes this new drug has the potential to be a major break through in the treatment of *P. aeruginosa* respiratory infections. During the upcoming year, Arch is intending to move forward with preparing human trials to test the safety and efficacy of the new drug against *P. aeruginosa* respiratory infections in cystic fibrosis patients.

AB569 is potentially a new treatment against other bacterial lung and skin infections.

Arch has entered into a one year option agreement with UC to exclusively license the commercial rights to a pending U.S. Patent for the new drug treatment. Arch and UC have also extended for another year an existing option to license the commercial rights to a related U.S. Patent for treating bacterial respiratory infections using acidified nitrite.

In the fourth quarter of 2014, the Company incorporated a new U.S. subsidiary called Arch Bio Ohio Inc in the event that the Company exercises the option to license the University of Cincinnati patent.

### **The Clinical Need for a New Treatment for *P. Aeruginosa***

*P. aeruginosa* is a significant cause of bacterial respiratory infections in patients who have cystic fibrosis (CF) or chronic obstructive pulmonary disease (COPD). It is also a common cause of pneumonia.

There are approximately 40,000 CF patients and over 14 million individuals diagnosed with COPD in the United States. It is estimated that 2 to 3 million people in the USA are diagnosed with pneumonia each year.

In particular, the mucoid form of *P. aeruginosa*, commonly found in CF patients, is a very challenging infection to treat due to its high resistance to both antibiotics and phagocyte-mediated killing. Once patients present with the mucoid form of *P. aeruginosa*, their overall lung function precipitously declines, resulting in a poor prognosis.

Thus, there is an urgent clinical need for the development of novel effective treatments in this area. AB569 constitutes an innovative treatment to potentially treat mucoid *P. aeruginosa* infections that are resistant to traditional antibiotics.

### **Cystic Fibrosis**

Cystic Fibrosis (CF) is an autosomal recessive genetic disease that causes abnormalities of the CF transmembrane conductance regulator (CFTR) protein. CFTR is a critical regulator of sweat, digestive fluids, and mucus production.

CF patients are predisposed to lung infections due to abnormal mucus production in the lungs and airways. *P. aeruginosa* infects 40% of CF patients between the ages of 6 and 10 years of age. By the age of 17, the frequency of infection increases to 60% and reaches approximately 75% of all CF patients between the ages of 25 and 34.

AB569 and MetaMx<sup>TM</sup> are presently the lead commercial opportunities in the Arch Biopartners' portfolio and the current focus of management for development and funding efforts.

### **III. MetaBlok<sup>TM</sup>**

In October of 2014, the Company acquired the rights to MetaBlok<sup>TM</sup>, a new drug candidate as a potential treatment for sepsis and cancer metastasis.



Sepsis and cancer metastasis represent large unmet medical needs in the world today. Sepsis alone occurs in 1 to 2% of all hospitalizations in the US. It affects at least 700,000 individuals per year.

Management of the Company believes MetaBlok™ has the potential to be a major break through in the treatment of both sepsis and cancer metastasis.

MetaBlok™ was invented by Arch scientists Dr. Stephen Robbins, Dr. Donna Senger, Dr. Jennifer Rahn and their University of Calgary colleague, Dr. Paul Kubes. The inventors have assigned the Metablock intellectual property to the Company.

### **About Sepsis**

Sepsis is a serious illness caused by the body's immune response to an infection. White blood cells, or leukocytes, defend the body against toxins and infection. If the immune system activates too many white blood cells to fight the infection, there is a risk of widespread, life threatening inflammation termed "Sepsis".

Sepsis is known to cause organ damage. Blood clotting during sepsis inhibits blood flow to organs and thus reduces their intake of nutrients and oxygen. In severe cases, one or more organs fail. In the worst cases, infection leads to a dangerous drop in blood pressure, called septic shock. This can quickly lead to the failure of several organs such as lungs, kidneys and liver, causing death.

Permanent organ damage can occur in patients who survive sepsis. Under current standard of care, mortality rates are over 20% for sepsis and over 50% for septic shock.

### **About Cancer Metastasis**

Cancer is a life threatening disease because of its ability to spread from its original tumour site to other tissues and organs in the body. This process of metastasis occurs through the bloodstream or lymphatic system.

Metastasis is of great importance since most of the cancer deaths are caused by spread of the primary cancer to other sites in the body. Recent evidence shows that 60% to 70% of patients have started the metastatic process by the time of diagnosis. Additionally, patients that do not have tumor spread at diagnosis are at risk for metastatic disease. New therapeutic treatments that protect patients against metastasis would be a major breakthrough in the treatment of cancer.

MetaBlok™ is currently under pre clinical development.

#### **IV. Borg: Peptide –Solid Surface Interface**

Arch Biophysics Ltd, was incorporated under the ABCA on October 29, 2009, to hold legal and beneficial title to the intellectual property produced by Dr. Randall Irvin and his co-inventors at the University of Alberta in connection with a new technology. The assets of Arch Biophysics Ltd. presently consist of patent applications filed with the United States Patent and Trademarks Office and PCT countries.

Arch Biophysics' lead technology is a library of peptides that bind to non-biological solid surfaces to:

- i) Reduce corrosion of various metals
- ii) Inhibit bacterial attachment to the surfaces of various materials, particularly medical materials; and,
- iii) Improve the biocompatibility of medical devices/implants.

The Company continues to explore and develop the commercial applicability of this technology to address important unmet medical and industrial challenges.

On February 24, 2015 and August 4, 2015, the United States Patent and Trademark Office issued patent numbers 8,961,984 and 9,096,775 respectively and both titled “Surface Coated Structures and Methods” protecting claims in the areas above.

#### **Bioorganic Stainless Steel**

In May, 2011, the Company disclosed that Arch scientists Randall Irvin, Dong Yang Li and Elisabeth Davis have successfully created a new material, which they have termed ‘bioorganic stainless steel’ or “Borg Peptide solid surface interface”.

Bioorganic stainless steel has a significantly increased electron work function that displays altered properties relative to the initial starting material. This new material was generated via a previously unreported type of chemical interaction between novel synthetic peptides (the lead compounds above) and stainless steel.

Increasing corrosion resistance has potential application in numerous industries where stainless steel and other metals are used, including industrial, life sciences and medical device sectors.

Details of these findings are reported in the journal *Biomaterials*. The publication, titled “A Peptide–Stainless Steel Reaction That Yields a New Bioorganic–Metal State of Matter” by Davis, Li and Irvin.

Arch's development of this technology to achieve efficacy at a macro scale for commercial use is ongoing.

## **Inhibiting Biofilm formation on Metals**

In December 2011 the company disclosed that Arch scientists have inhibited biofilm formation (bacterial attachment) on titanium using the Company's proprietary peptide technology.

The attachment of *Pseudomonas aeruginosa* was reduced by more than 50% on titanium coated with Arch lead compounds ABP-0904 and ABP-0918. These data are similar to previously disclosed results where ABP-0904 and ABP-0918 were effective in inhibiting attachment of several bacteria including *Staphylococcus aureus*, *Streptococcus viridans*, *Pseudomonas aeruginosa*, and *Listeria monocytogenes* to stainless steel.

In addition to the effects on biofilm formation, ABP-0904 and ABP-0918 increased titanium hardness by more than 50% compared to the uncoated metal.

Management believes these results provide opportunities for commercial development in the medical industry where biofilm formation on titanium, stainless steel and other solid surfaces is a significant problem. Medical devices and implants, such as catheters, orthopedic and dental implants, have a tendency to attract microbial biofilm formation. Antimicrobial-resistant organisms often form such biofilms. It is estimated that more than 75% of urinary tract infections, pneumonias and bloodstream infections originating in hospitals are associated with medical devices and cost the healthcare industry billions of dollars to treat annually.

## **V. Arch Inflammation Technology Developments**

Arch Biotech's lead technology platform is called Arch Inflammation ("AI"). AI is developing anti-inflammatory small molecules that target proteins in the innate immune system.

Sterile inflammation (i.e. inflammation not caused by an infection or microbe) is a significant component of most chronic diseases. Chronic inflammation associated with disease often leads to a cycle of ongoing injury, progressive scarring and organ damage. For example, in both the gastrointestinal tract and in the kidney, the nature of the injury or inflammation determines which patients recover and which patients go on to develop chronic kidney failure or inflammatory bowel disease. The innate immune system represents a relatively new group of pathways that are involved in sterile inflammation and the tissue response to injury. Many of these pathways are implicated in a wide variety of chronic diseases and represent an attractive therapeutic target.

The AI team continues to work toward developing new drug candidates and technologies that target and block inflammation pathways.

## **ITEM 2 - Overall Performance**

The Company has not yet generated operating revenue. During the year ended September 30, 2014 and subsequently during the nine months ending June 30, 2015, the Company spent approximately \$25,000 to 35,000 per month on operations, professional fees and governance. This spending rate of the Company during the last year has been consistent with the spending rate the Company has consistently displayed in recent years.

The current operations of the Company do not show a build up capital expenditures or significant research and development expenses, as any facilities used for research and development to date have been owned by third parties. Lab expenditures to date have been predominantly funded through various research grants.

Cash flow used by operating activities totaled \$162,120 during the third quarter and the Company reported a loss from operations of \$158,081 for the same period, compared with a loss from operations of \$124,857 for the same quarter a year earlier. The larger loss is mostly the result of higher operating expenses for the quarter that did not occur in the same period last year.

### *Comment Regarding Operating Segments*

The annual consolidated financial statements for the year ending September 30, 2014 and the interim consolidated financial statements for the three months ending June 30, 2015 include the accounts of the Company and its four subsidiaries. Each subsidiary is considered an operating segment. The Company and its subsidiaries represent one reporting segment as all activity is effectively in the same line of business.

## **ITEM 3 - Selected Annual Information**

This section is not applicable to the interim MD&A pursuant to Form 51-102F1 contained in National Instrument 51-102. To view selected annual information, please refer to the Company's annual financial statements for the year ended September 30, 2014 and MD&A filed on SEDAR at [www.sedar.com](http://www.sedar.com)

## **ITEM 4 - Results of Operations**

The Company reported a *loss from operations* of \$158,081 for the three months ended June 30, 2015 versus a *loss from operations* of \$124,857 for the same period last year.

The increased losses during the quarter compared with the same quarter last year were mostly the result of increased operating expenses. In particular, wages and employee benefits totalled \$26,852 for the quarter versus 10,710 in the same period last year. General marketing expense

increased to \$15,220 versus 2,082 from a year earlier as the Company increased its communications activity.

Patent expenses decreased to \$47,352 during the third quarter from \$57,130 and the difference year over year does not indicate any material change in patent strategy, or level of activity, in the Company's intellectual property portfolio.

Research expense was \$33,569 compared with \$36,231 in the third quarter of 2014 reflecting a similar pace of R&D expenditures to third party labs over the past year. During the third quarter of 2015, these research expenses were committed to the development of AB569 and the Borg peptides.

The remaining losses for the current quarter include the sum total of all general and administrative expenses, including communication costs and professional fees associated with managing the Company. These costs were not materially different than the prior year as the Company continued a stable, low cost of operations.

The result for the quarter is a *Net loss* of \$165,869 or a loss of \$0.003 per common share based on a weighted average number of 52,821,033 common shares outstanding as at June 30, 2015. Management expects an increased pace of expenditures during the remainder of 2015 in order to advance certain proprietary technologies toward clinical trials and viable commercial products. Management of the Company is considering accessing capital markets to raise more funds to complement existing resources. Please see ITEM 6 – Liquidity for more information.

## ITEM 5 - Summary of Quarter Results

The following table sets forth, for each quarter ended on the date indicated, information relating to the Company's revenue, net income (loss) per common share as prepared under IFRS.

<i>All values in CAD</i>								
Quarter Ending:	Jun 30 2015 Q3	Mar 31 2015 Q2	Dec 31 2014 Q1	Sept 30 2014 Q4	June 30 2014 Q3	Mar 31 2014 Q2	Dec 31 2013 Q1	Sep 30 2013 Q4
<b>Revenue</b>	-	-	37,598	-	-	-	-	-
Income (loss) BEFORE discontinued operations	(165,869)	(168,163)	(358,865)	(121,266)	(130,860)	(93,617)	(52,764)	(58,995)
Income (loss) BEFORE other items	(165,869)	(168,163)	(358,865)	(121,266)	(130,860)	(93,617)	(52,764)	(58,995)
Per share	(0.003)	(0.003)	(0.007)	(0.0025)	(0.003)	(0.002)	(0.001)	(0.001)
<b>Results Surrounding Extraordinary/Other Items:</b>								
Discontinued Operations	-	-	-	-	-	-	-	-
Extraordinary/Other Items	-	-	-	-	-	35,000	-	-
<b>Income (Loss)</b>	(165,869)	(168,163)	(358,865)	(121,266)	(130,860)	(58,617)	(52,764)	(58,995)
Per share	(0.003)#*	(0.003)#*	(0.007)#	(0.0025)#	(0.003)***	(0.001)***	(0.001)**	(0.001)**

\* Based on 47,760,179 shares outstanding since June 30, 2012

\*\* Based on 48,260,179 shares outstanding since Sept 30, 2013

\*\*\* Based on 49,634,679 shares outstanding since March 31, 2014

# Based on 50,979,179 shares outstanding since August, 2014; #\*Based on 53,189,679 shares outstanding since March, 2015

## ITEM 6 - Liquidity

The Company's primary source of cash flow is from the issuance of its own securities, as it has not yet generated positive cash flows from its operations. Economic downturn, a weak stock market, restriction of global capital similar to the global financial crisis of 2008-09 are examples that could make it more difficult for the Company to raise money in the future if it so requires. In 2015, management of the Company will consider accessing capital markets to raise more funds to complement existing resources and improve its cash position.

The Company's working capital surplus as at June 30, 2015, was \$646,057. This working capital surplus is a calculated number and does not have a formal definition according to IFRS but management feels it provides useful information to the user of the financial statements.

The Company has taken the following steps to improve liquidity and working capital during 2014 and 2015:

- During January 2015, the Company raised \$750,050 by closing a non-brokered private placement it announced in a press release January 6, 2015. Pursuant to the terms of the private placement, Arch issued 2,143,000 Units at a price of \$0.35 per unit (the "Units"). Each Unit consists of one common share of the Company and one common share

purchase warrant (the “Warrant”). Each Warrant entitles the holder to purchase one common share of the Company at an exercise price of \$0.70 per common share until 5:00PM EST on January 13, 2017.

- On August 5, 2014, the Company announced it raised \$175,140 via a non-brokered private placement of 625,500 Units at a price of \$0.28 per Unit. Each Unit comprises of one common share and one common share purchase warrant. Each warrant allows the holder to purchase an additional common share at \$0.50 cents during the 24-month period following the close of the private placement. The proceeds will be used for the Company’s working capital and general corporate purposes. The common shares and any common shares issued from the exercise of the warrants will be subject to a hold period of 4 months from the closing date.
- On July 7, 2014, the Company announced it raised \$200,200 via a non-brokered private placement of 715,000 Units at a price of \$0.28 per Unit. Each Unit comprises of one common share and one common share purchase warrant. Each warrant allows the holder to purchase an additional common share at \$0.50 cents during the 24-month period following the close of the private placement. The proceeds will be used for the Company’s working capital and general corporate purposes. The common shares and any common shares issued from the exercise of the warrants will be subject to a hold period of 4 months from the closing date.
- On March 25, 2014, the Company announced it raised \$155,960 via a non-brokered private placement of 557,000 Units at a price of \$0.28 per Unit. Each Unit comprises of one common share and one common share purchase warrant. Each warrant allows the holder to purchase an additional common share at \$0.50 cents during the 24-month period following the close of the private placement. The proceeds will be used for the Company’s working capital and general corporate purposes. The common shares and any common shares issued from the exercise of the warrants will be subject to a hold period of 4 months from the closing date.
- On February 25, 2014, the Company announced it raised \$228,900 via a non-brokered private placement of 817,500 Units at a price of \$0.28 per Unit. Each Unit comprises of one common share and one common share purchase warrant. Each warrant allows the holder to purchase an additional common share at \$0.50 cents during the 24-month period following the close of the private placement. The proceeds will be used for the Company’s working capital and general corporate purposes. The common shares and any common shares issued from the exercise of the warrants will be subject to a hold period of 4 months from the closing date.
- On February 25, 2014, the Company also announced that the National Research Council of Canada - Industrial Research Assistance Program (NRC-IRAP) has approved funding



up to \$91,000 to assist Arch in the development of its bioorganic metal surfaces technology.

- During August 2013, the Company issued 400,000 Units at a price of \$0.25 per Unit, for gross total proceeds of \$100,000. Each Unit comprises of one common share and one common share purchase warrant. Each warrant allows the holder to purchase an additional common share at \$0.50 cents during the 24-month period following the close of the private placement.
- Company management has secured loans from a director and a shareholder of the Company. The outstanding amount is approximately \$321,545 including accrued interest as at March 31, 2015. During January, 2015 the Company agreed to extend this loan to mature on January 15, 2017 and agreed to pay 6% per annum paid semi-annually on these funds. These funds were used when the Company had insufficient working capital at various times to settle payables and ongoing expenses of the Company's operations. The funds were also used to restructure the Company and complete the transactions that led to the formation of Arch Biopartners Inc. on May 7, 2010.

## **ITEM 7 - Capital Resources**

The Company does not currently have any commitments to capital expenditures nor does it have any externally imposed capital requirements at this time.

Management expects during the next 12 months to make additional expenditures of at least \$100,000 in the area of protecting intellectual property emanating from its subsidiaries. Management views this as vital to maintaining the Company's competitive position in developing new technologies for commercial use and to be able to fund development activities in the future. Exact amounts of future patent expense will depend on future success of technology development within the Company's subsidiaries.

Presently, the Company does not have sources of capital other than issuing new equity.

## **ITEM 8 - Off-Balance Sheet Arrangement**

### *Intellectual Property Transfer Agreements*

University of Calgary policy dictates that all scientific intellectual property is 100%-owned by the inventor. In 2010, the University of Calgary scientists contractually assigned ownership of current and future intellectual property relating to the Arch Biotech and Arch Cancer Therapeutics' research projects to the Company.

In 2010, the University of Calgary exchanged its revenue sharing rights in the intellectual property produced by the specified Arch Biotech research programs at the University of Calgary



in exchange for an equity stake in Arch Biotech. Subsequently, at the time of formation of Arch Biopartners, the Company agreed to issue 1,576,000 common shares at a deemed price of \$0.50 per share to the University of Calgary in exchange for its equity stake in Arch Biotech.

The scientists of Arch Biophysics Ltd, the University of Alberta and the Company executed a similar intellectual property assignment to the Company for the rights to the Peptide-Solid Surface Interface.

This intellectual property represents one of the key assets of the Company.

#### *Scientist Engagement Contracts*

Scientists managing the Company's technology development within the Company's subsidiaries have executed scientist engagement contracts with the Company. Pursuant to the contracts, the scientists are obliged, among other things, to work on the Company's respective research programs exclusively for the Company without detracting from their responsibilities as members of the university faculty.

### **ITEM 9 - Transactions with Related Parties**

The following were transactions with Related Parties subsequent to, and during, the year ending September 30, 2014:

- On October 24, 2014 the Company announced that it had granted 1,200,000 incentive stock options to its directors, officers, and consultants pursuant to its 2014 stock option plan. Each stock option is exercisable into a common share of the company for a period of five years. A total of 900,000 options exercisable at \$0.30 per share; 100,000 are exercisable at \$0.40 per share and 200,000 are exercisable at \$0.50 per share.
- Up to September 30, 2014, Richard Muruve, a director and current CEO of the Company, lent a total of approximately \$395,000 (including accrued interest) to the Company for working capital purposes. On January 14, 2015 the Company extended the term of the loan outstanding described above. The shareholder's loan has been extended to January 15, 2017 at a fixed rate of 6% per annum paid semi-annually. The principal together with any accrued interest will become due and will be paid in full by the Company so long as such payment does not reduce the Company's ability to complete its product development work plan for any given 12month period from date of repayment. The balance outstanding of this loan as at March 31, 2015 is \$321,545.

## **ITEM 10 - Proposed Transactions**

The Company does not have any proposed transactions as at the date hereinabove.

For more information regarding past transactions, please consult the Company's public filings including the Management Information Circular at [www.SEDAR.com](http://www.SEDAR.com)

## **ITEM 11 - Critical Accounting Estimates**

This section is not required as the Company is a Venture Issuer, as the term is defined in National Instrument 51-102. Comments on accounting estimates are disclosed in the notes to the annual financial statements.

## **ITEM 12 - Financial Instruments and Other Instruments**

Please refer to Note 3 – “Summary of Significant Accounting policies - *Financial Instruments*” and Note 5 – “Financial Instruments” in the Company's audited annual financial statements for the year ending September 30, 2014.

## **ITEM 13 - Other MD&A Requirements**

The Company is authorized to issue an unlimited number of common shares, where each common share provides the holder to one vote. At of the date of this Management Discussion and Analysis there were 53,189,679 common shares issued and outstanding. In addition, the Company had the following convertible securities outstanding:

<b>Type</b>	<b>Quantity</b>	<b>Exercise Price</b>	<b>Expiry Date</b>
Stock Options	0	\$0.20	February 22, 2013
	250,000	0.90	April 15, 2016
	900,000	0.30	October 24, 2019
	100,000	0.40	October 24, 2019
	200,000	0.50	October 24, 2019
	50,000	0.40	April 16, 2018
Warrants	0	0.60	April 16, 2014
	0	0.60	June 24, 2014
	0	0.50	August 6, 2015
	0	0.50	August 19, 2015
	817,500	0.50	February 25, 2016
	557,000	0.50	March 25, 2016
	715,000	0.50	July 7, 2016
	625,500	0.50	August 5, 2016
2,143,000	0.70	January 13, 2017	

On January 24, 2013, director exercised 100,000 stock options, the last of the Company's February 2013 options. The remaining 250,000 April 15 2016 stock options were awarded to a director in 2011 and have yet to be exercised. April 16, 2014 warrants at \$0.60 totalling 300,000 expired without being exercised. Please see ITEM 6 – Liquidity, for details regarding the warrants. Please see ITEM 9 – Transactions with Related Parties for more details on the October, 2019 options.

## **Summary of Significant Accounting Policies**

Please refer to Note 2 of the Company's audited annual financial statements for the year ending September 30, 2014.

## **Future Accounting Changes**

### **(i) International Financial Reporting Standards**

In February 2008, the Canadian Institute of Chartered Accountants (CICA) announced that Canadian GAAP for publicly accountable enterprises would be replaced by IFRS for interim and annual financial statements for fiscal years beginning on or after January 1, 2011. The standard also requires that comparative figures for 2010 be based on IFRS. Accordingly, the Company adopted IFRS on October 1, 2011, with restatement for comparative purposes of amounts reported by the Company for the fiscal year beginning October 1, 2010.

The significant accounting policies adopted under IFRS are included in Note 3 to the consolidated financial statements for the years ended September 30, 2013 and 2014. These accounting policies have been applied consistently to all periods presented in the financial statements. They also have been applied in preparing an opening IFRS statement of financial position as at October 1, 2011, the Company's transition date, as required by IFRS 1. The accounting policies were selected to be consistent with IFRS, effective on September 30, 2012, the Company's first annual IFRS year end reporting date. The standards and interpretations within IFRS were finalized when the first full IFRS financial statements were prepared for the year ending September 30, 2012.

Reconciliations and descriptions of the effect of the transition from Canadian GAAP to IFRS are included in Note 2 to the audited consolidated financial statements for the year ended September 30, 2012.

The transition from Canadian GAAP to IFRS had no impact on total comprehensive income (loss).

## Discussion on Disclosure and Internal Controls

**As a venture issuer, Arch Biopartners management is not required to certify or include representations about the design and maintenance of Disclosure Controls & Procedures or Internal Control over Financial Reporting and none of the following comments should be so interpreted; however, in the interest of full disclosure, management wishes to include the following comments on Internal Control over Financial Reporting and Disclosure Controls & Procedures.**

In assessing Disclosure Controls and Procedures and Internal Control over Financial Reporting, readers are cautioned that a control system can only provide reasonable, not absolute, assurance that the objectives of the control system are achieved. Due to the inherent limitations in all control systems, an evaluation of controls cannot provide absolute assurance that all control issues, including instances of fraud, if any, have been detected. Inherent limitations include the possibility that the assumptions and judgments of management could ultimately prove to be incorrect under varying conditions and circumstances; or that isolated errors could prove to have a significant impact on the reliability of information.

Additionally, controls may be circumvented by the unauthorized acts of individuals, by collusion of two or more people, or by management override. The design of any system of controls is also based in part upon certain assumptions about the likelihood of future events, and it is not possible to provide complete assurance that a control system will succeed in achieving its stated goals under all potential future conditions.

## Business Risks and Uncertainties

An investment in the common shares of the Company should be considered highly speculative due to the nature of the business of the Company, consisting of research, development and commercialization of patents for industrial products, pharmaceuticals or therapies for the treatment related of human diseases, as well the Company's present stage of its development and its lack of operating history. In evaluating the business of the Company, readers should carefully consider the following risk factors. Additional risks not currently known to the Company as of the date hereof may also impair future business operations of Company. The list below is not a definitive list of all risk factors associated with the business of the Company.

### *Debt and Interest Risk*

The Company does not have any external debt at the moment. As previously mentioned, the Company has a loan of proximately \$321,000 outstanding from a director and a shareholder.

Management of the Company does not consider this debt exposure to have material sensitivity to changes in interest rates.

### *Current Global Financial and Economic Conditions*

Current global financial and economic conditions remain extremely volatile. Several major international financial institutions and other large, international enterprises have either filed for bankruptcy or are being actively rescued by governmental intervention. Access to public and private capital and financing continues to be negatively impacted by many factors as a result of the global financial crisis and global recession. Such factors may impact the Company's ability to obtain financing in the future on favourable terms or obtain any financing at all. Additionally, global economic conditions may cause a long-term decrease in asset values. If such global volatility, market turmoil and the global recession continue, the Company's operations and financial condition could be adversely impacted.

### *Risks Related to Early Stage Development*

The Company is currently at an early stage of development and subject to start up risks, including start up losses, lack and uncertainty of revenues, unproven markets for its products, risks in the commercialization process, lack of profitability and the need to raise additional funding.

### *Risks Associated with Biomedical Research, Development and Product Commercialization*

The Company's growth and future success will be substantially dependent on its ability to develop, license or otherwise acquire new commercially viable patents and products and obtain related governmental approvals. Any failure in respect of the commercial viability of the Company's patents or failure to obtain related governmental approvals could result in a material adverse effect on the business, financial condition and results of operations of the Company. The business of the Company is subject to significant and material risks that cannot be eliminated or adequately mitigated, even with careful and prudent planning and evaluation, experience, knowledge and managerial and operational know-how. The Company will face a number of uncertainties. Development of intellectual property into commercially viable patents can oftentimes completely fail or be terminated at any stage in the research and development process, oftentimes after the expenditure of considerable financial resources.

Health Canada's Therapeutic Products Directorate (the "TPD") is the Canadian federal authority that regulates pharmaceutical drugs and medical devices for human use. The United States Food and Drug Administration (the "FDA") performs a similar function at the federal level in the United States. Prior to being given market authorization to sell products sold in the U.S. and Canada, respectively, the TPD and FDA must be presented with substantive scientific evidence of a product's safety, efficacy and quality. Member states of the European Union and other nations may impose similar regulatory pre-approvals before products can be brought to market. Obtaining FDA, TPD and other regulatory and governmental approvals is extremely time consuming, requires a material amount of capital and subjects products to thorough testing. The

outcome of such regulatory applications can often times be unpredictable and yield unanticipated outcomes. The time involved, and the potential failure to obtain, FDA, TPD and other similar regulatory approvals could adversely affect the Company's business plan, product pipeline, financial condition and results of operations.

The Company may rely on the acquisition or licensing of other patents, products or technologies sourced from third parties. The use of such a strategy will draw down the Company's resources in connection with due diligence and expenses in identifying, evaluating and negotiating joint venture or acquisition agreements. In addition, the licensing of patents, products or technologies from third parties can involve significant counterparty contractual risk.

#### *Significant Future Capital Requirements, Future Financing Risk and Dilution*

No assurances can be provided that the Company's financial resources will be sufficient for its future needs. Current projections for revenues from operations are insufficient to meet the Company's future capital requirements. As such, the Company will be required to undertake future financings that may be in the form of a sale of equity, debt secured by assets or forward purchase payments. No assurances can be made that the Company will be able to complete any of these financing arrangements or that the Company will be able to obtain the capital that it requires. In addition, the Company cannot provide any assurances that any future financings will be obtained on terms that are commercially favourable to the Resulting Issuer.

Any such future sale of Common Shares or other securities convertible into Common Shares will lead to further dilution of the equity ownership of existing shareholders.

#### *No Anticipated Dividends*

The Company does not expect to pay dividends on its issued and outstanding Common Shares in the foreseeable future. If the Company generates any future earnings such cash resources will be retained to finance further growth and current operations. The board of directors of the Company will determine if and when dividends should be declared and paid in the future based on the financial position of the Company and other factors relevant at the particular time. Until the Company pays dividends, which it may never do, a shareholder will not be able to receive a return on his or her investment in the Common Shares unless such Common Shares are sold. In such event, a shareholder may only be able to sell his or her Common Shares at a price less than the price the shareholder originally paid for them, which could result in a significant loss of such shareholder's investment.

#### *Negative Cash Flow and Absence of Profits*

The Company has not earned any profits to date and there is no assurance that it will earn any profits in the future. The Company expects to continue to incur significant operating losses as

continued development and clinical trials occur. Such losses are anticipated to have an adverse effect on shareholders' equity and working capital. The Company will need to generate significant revenues in order to achieve and maintain profitability and there can be no guarantees that profitability, if ever achieved, will be sustained.

The Company's ability to generate revenue in the future is dependent, in large part, on completing product development, obtaining regulatory approvals and successful commercialization and marketing of the Company's patents for pharmaceuticals or therapies for the treatment related of human diseases. The Company cannot provide any assurances that the products it may develop or license will ever successfully commercialize or achieve revenues from sales. There can be no assurance that future revenues will be sufficient to generate the required funds to continue in the biotechnology industry.

#### *Limited Operating History*

The Company is in the early stage of development. As such, the Company is subject to many risks common to such enterprises, including under-capitalization, cash shortages, limitations with respect to personnel, financial and other resources and the lack of revenues. There is no assurance that the Company will be successful in achieving a return on shareholders' investment and the likelihood of success must be considered in light of its early stage of operations.

#### *Management of Growth*

The Company may be subject to growth-related risks including pressure on its internal systems and controls. The Company's ability to manage its growth effectively will require it to continue to implement and improve its operational and financial systems. The inability of Company management to deal with this growth could result in a material adverse impact on its business, operations and prospects. While management believes that it will make the necessary investments in infrastructure to process anticipated volume increases in the short term, the Company may experience growth in the scope of its operating and financial systems, resulting in increased responsibilities for the Company's personnel, the hiring of additional personnel and, in general, higher levels of operating expenses. In order to manage its current operations and any future growth effectively, the Company will also need to continue to implement and improve its operational, financial and management information systems and to hire, train, motivate, manage and retain its employees. There can be no assurance that the Company will be able to manage such growth effectively, that its management, personnel or systems will be adequate to support the Company's operations.

#### *Risks Related to Pre-Clinical and Clinical Trials*

Extensive preclinical and clinical trials (collectively "**Clinical Trials**") are required to commercialize the Company's pipeline of products, which involves, among other things,



demonstrating safety and efficacy. Clinical Trials are capital intensive undertakings, take years to complete and can oftentimes yield unintended outcomes, including, among other things, harmful side effects that may delay or bar regulatory approval or limit commercial use of the product, if approved. The Company's future success will depend, to a significant degree, on obtaining successful outcomes to Clinical Trials. In general, Clinical Trials are risky, time consuming endeavours and can oftentimes result in complete failure after material expenditures are made, especially where a novel use or chemical is proposed or tested, which can also increase the risk of harmful side effects. The Company's developmental pipeline may never evolve into commercially viable products if adverse outcomes or failures arise in connection with Clinical Trials. The scope, duration and number of Clinical Trials will vary according to the relevant governmental agency. Failure to obtain regulatory approval or successful commercialization of the product pipeline could result in a material adverse effect on the business and financial condition of the Company.

#### *Risks Related to Marketplace Acceptance of the Resulting Issuer's Products*

The Company's product pipeline may appear promising but may ultimately fail to reach a defined market. Additionally, the Company's products may have limited or no commercial success. Market acceptance of the Company's products will be impacted by several factors, none of which (collectively or individually) can necessarily be eliminated, adequately mitigated or managed, even with careful and prudent planning and evaluation, experience, knowledge and managerial and operational know-how. Such factors include, but are not limited to, the following (in no particular order): (i) timing of regulatory approvals, (ii) competition from more established firms, (iii) safety of the proposed product as compared to existing treatments, including the availability of alternatives, (iv) scope of approved use and marketing approval, (v) costs to produce the product and (vi) price.

#### *Risks Related to Intellectual Property (Licenses, Patents and Proprietary Rights)*

The patent positions of other persons are oftentimes uncertain and tend to involve an examination of increasingly complex legal and factual questions. The patent situation outside the U.S. and Canada is even more uncertain. The business of the Company will be characterized by a significant amount of potential litigation risk in relation to patent defence and patent infringement claims. The success of the Company will depend upon its ability to protect its own intellectual property while simultaneously conducting its affairs in a manner that does not infringe upon the proprietary rights of others. Existing patent holders, or others, may seek to oppose or challenge some or the Company's entire portfolio of patents or may actively attempt to circumvent the Company's patents. Additionally, the Company may discover that existing patents may impede its ability to capitalize on the outcomes of its research projects. The Company can provide no assurances that it can successfully defend its patents and can provide no comfort that a court will ultimately uphold their validity. The costs of litigation, if any, may be material and may quickly strain the limited financial resources of the Company. In addition to



cost any litigation could be time-consuming and place severe operational strains upon senior management team and technical personnel. The loss of actual litigation, if any, could result in monetary damages being levied against the Company or subject the Company to an interlocutory or permanent injunction.

#### *Risks Related to Competition and Technological Change*

The biotechnology industry is extremely competitive and is subject to rapid and significant technological change, which among other things, places immense pressure on the business of the Company. The Company competes against other, more established research teams and firms who may be examining the same subject matter being researched by the Company. A large number of the Company's competitors, which include, among others, major pharmaceutical and chemical companies, specialized contract research organizations, research-and-development firms, universities and other research institutions will have superior financial and operational resources and more experience in research and development. Competitors may develop new treatments or technologies that compete with the Company's products or even render the Company's technologies obsolete.

#### *Risks Related to Product Liability Claims*

Product liability claims may arise against the Company in connection with the testing and administration of pharmaceuticals, whether in Clinical Trials or commercially, and may arise regardless of whether the Company's product is actually at fault. In general, product liability claims may produce product recalls, result in protracted litigation and could cause adverse publicity, any of which outcomes could adversely affect the regulatory approval process and/or cause a long term decline in the value of the Common Shares. The defense of product liability claims (which oftentimes comes in the form of a class proceeding) can be extremely time consuming and costly, even against bogus claims, and may place significant strains on the financial resources of the Company. The Company does not carry any product liability insurance at this time but intends to do so as its business develops and its product pipeline is commercialized. However, product liability insurance coverage is very expensive, is oftentimes difficult to obtain, may not be available on commercially reasonable terms or may be capped at certain thresholds, which may result in uninsurable risks to the Company. The Company can provide no assurances that product liability insurance, if any, will be obtained or if obtained will be adequate in scope.

#### *Key Personnel*

The Company's business involves a high degree of risk, which a combination of experience, knowledge and careful evaluation may not be able to be managed or overcome. As such, the Company's success is dependent on the services of its senior management and the members of its Scientific Advisory Board. The loss of one or more of the Company's key employees or consultants could have a material adverse effect on the Company's operations and business

prospects. In addition, the Company's future success will depend on its ability to attract and retain skilled technical, management and marketing personnel. There can be no assurance that the Company will be successful in attracting and retaining such personnel and the failure to do so could have a material adverse effect on the Company's business, its operating results as well as its overall financial condition.

#### *Foreign Exchange Risk*

The majority of expenses are now in Canadian dollars only. Less than 30% of the Company's expenses are denominated in US dollars.

At the present time, the Company does not use any foreign exchange risk management tools such as currency forward or options contracts.