



## **SERNOVA CORP.**

**MANAGEMENT'S DISCUSSION AND ANALYSIS**

**FOR THE THREE AND NINE MONTHS ENDED  
JULY 31, 2016 AND 2015**

Dated September 27, 2016

700 Collip Circle  
The Stiller Centre, Suite 114  
London, ON N6G 4X8  
[www.sernova.com](http://www.sernova.com)

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The following management's discussion and analysis ("MD&A") explains the variations in the consolidated operating results, financial position and cash flows of Sernova Corp. ("Sernova", the "Company", "We", "Us" or "Our") for the three and nine months ended July 31, 2016 and 2015. This MD&A should be read in conjunction with the Company's unaudited interim condensed consolidated financial statements for the three and nine months ended July 31, 2016 and 2015 and its audited consolidated financial statements and related notes for the years ended October 31, 2015 and 2014, which have been prepared in accordance with International Financial Reporting Standards ("IFRS") as issued by the International Accounting Standards Board ("IASB").

The Company's accounting policies under IFRS are set out in Note 3 of the audited consolidated financial statements for the years ended October 31, 2015 and 2014.

The information in this report is dated as of September 27, 2016.

### **FORWARD-LOOKING STATEMENTS**

This MD&A contains "forward looking statements" that reflect the Company's current expectations and projections about its future results. When used in this MD&A, forward looking statements can be identified by the use of words such as "may", or by words such as "will", "intend", "believe", "estimate", "consider", "expect", "anticipate", and "objective" or similar expressions and variations of such words. Forward looking statements are, by their nature, not guarantees of the Company's future operational or financial performance, and are subject to risks and uncertainties and other factors that could cause the Company's actual results, performance, prospects or opportunities to differ materially from those expressed in, or implied by, these forward looking statements. No representation or warranty is intended with respect to anticipated future results, or that estimates or projections will be sustained.

The Company's statements of "belief" with respect to its product candidates are based primarily upon results derived to date from its pre-clinical and initial clinical research and development and the Company's research and development programs. The Company also uses the term "demonstrated" in this MD&A to describe certain findings that it makes arising from its research and development including any pre-clinical and clinical studies that the Company has conducted to date.

Specifically, this MD&A contains forward-looking statements which include, but are not limited to, statements regarding:

- The Company's corporate strategies and objectives;
- General business and economic events;
- The availability of various forms of financing such as private equity, government or non-profit agency funding and other programs;
- The initiation and completion of pre-clinical studies and clinical trials of our Cell Pouch™ for the treatment of insulin-dependent diabetes and other diseases;
- The expected benefit of the Cell Pouch™ with therapeutic cells;
- The expected benefit of the European Commission's Horizon 2020 grant for our hemophilia program;
- The intention to protect therapeutic cells within the Cell Pouch™ from immune attack using local immune protection such as microencapsulation or other local immune protection technologies, or through the use of systemic antirejection regimens or a combination thereof;
- The intention to use human autograft cells, or human donor cells for treatment, or human stem cell derived cells or xenogeneic cells which are considered unlimited cell sources for our Cell Pouch™ for the potential treatment of chronic diseases;

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- The intention to receive regulatory approval and commercialize the Cell Pouch™ for the treatment of insulin-dependent diabetes and other potential indications such as hemophilia and thyroid disease;
- Expectations with respect to the cost of Sernova's products, clinical trials and commercialization of our products;
- Sales and marketing strategy;
- Sernova's intentions to secure academic and pharmaceutical collaborations and to develop and implement partnering strategies; and
- Intentions regarding the development and protection of Sernova's intellectual property.

In developing the forward-looking statements in this MD&A, the Company has applied several material assumptions, including the availability of financing on reasonable terms, the Company's ability to form and maintain strategic alliances with other business entities and general business and economic conditions.

Readers are cautioned not to place undue reliance on these forward looking statements, which speak only as of the date of this MD&A or as of the date otherwise specifically indicated herein. Due to risks and uncertainties, including the risks and uncertainties described elsewhere in this MD&A, actual events may differ materially from current expectations. The Company disclaims any intention or obligation to update or revise any forward looking statements, whether as a result of new information, future events or otherwise.

This MD&A has been prepared to help investors understand the financial performance of Sernova in the broader context of the Company's strategic direction, the risks and opportunities as understood by management, and some of the key metrics that are relevant to the Company's performance. This MD&A has been reviewed and approved by the Company's Audit Committee and the Board of Directors. The Company's Audit Committee includes three independent Directors who are financially knowledgeable.

## **ABOUT SERNOVA**

Sernova Corp. is a Canadian-based regenerative medicine company, focused on commercializing its proprietary Cell Pouch™ and associated technologies including therapeutic cells and local immune protection. The Cell Pouch™ is a scalable, implantable, medical device, designed to create an ideal, microvessel rich, tissue environment for the transplantation and engraftment of therapeutic cells, which then release proteins and/or hormones for the long-term treatment of a number of serious, chronic diseases such as diabetes, hemophilia and thyroid disease. Depending on the clinical indication, the therapeutic cells may be obtained directly from human donors' autograft (self-cells) or allograft cells (other's donor cells), or derived from sources known to provide a virtually unlimited supply of cells such as from a stem cell derived or xenogeneic (non-human) source. Depending on the need, the therapeutic cells may be protected within the Cell Pouch™ using systemic or local immune protection technologies such as microencapsulation or other local immune protection technologies being developed to create an immune privileged environment for protection of the Cell Pouch™ transplant from rejection.

Our initial studies have focused on the treatment of insulin-dependent diabetes through the transplantation of pancreatic islets, which control blood glucose levels. To date, we have successfully transplanted donor islets in our Cell Pouch™ to treat insulin-dependent diabetes in multiple animal models, and conducted a proof of principle clinical study for the treatment of human subjects with diabetes receiving an islet transplant, protected by the standard of care antirejection drug regimen. In this study, results in a small cohort of patients have shown the Cell Pouch™ to be safe alone and with donor islets. The Company plans to continue clinical investigation of the Cell Pouch™ with donor islets. The Company has also secured a potential source of unlimited cells, through the signing of a license agreement with the University Health Network (UHN) of

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Toronto, Canada to gain exclusive worldwide rights to certain patent-pending technologies that are related to the development of stem cells into insulin producing glucose-responsive therapeutic cells developed by UHN researchers. We continue to identify additional potential sources of cells which are not limited by donor availability through license agreements and/or partnerships, which can then be immune-protected within the Cell Pouch™ as a product to enable potential treatment of millions of people with diabetes. The Company is also investigating other diseases amenable to treatment with therapeutic cells such as hemophilia and thyroid disease.

### **Research and Development**

Sernova has been a development stage company since inception. Our research and development efforts are focused principally on the development of the Cell Pouch™ with therapeutic cells for the treatment of chronic diseases, and on local immune protection technologies (e.g. microencapsulation) that may protect the therapeutic cells within the Cell Pouch™ from immune system attack. We have not been profitable since inception, and we expect to continue to incur substantial losses as we continue our research and development efforts. We do not expect to realize material revenues until, if and when, our medical technologies become commercially viable; however, we continue to seek partnerships with pharmaceutical companies which we expect to result in substantial contributions to the development costs related to our products.

Our objective is to advance our medical technologies through the various stages required to develop a commercial product. The programs we undertake may involve third party collaborations and corporate partnerships in addition to our internal clinical development efforts. To achieve our goals, our primary activities include the following:

1. Conducting clinical trials required to gain marketing approval for the Cell Pouch™ System in countries that have a significant market opportunity. Our first product is being developed for the treatment of insulin-dependent diabetes. Our first clinical trial, designed to demonstrate the proof of concept of the Cell Pouch™ and therapeutic cells, was initiated in Canada and is ongoing. The treatment is the Cell Pouch™ transplanted with human donor islets, protected using the standard of care antirejection drug regimen, for subjects with insulin-dependent diabetes with hypoglycemia unawareness.

We are currently planning for the conduct of additional clinical evaluation of our Cell Pouch™ in the United States in patients with hypoglycemia unawareness using human donor islets and a standard of care antirejection drug regimen to further study the safety and efficacy of the device in these patients as a potential therapy.

The Company also has a long-term goal of the treatment of diabetes using the Cell Pouch™ transplanted with locally immune protected cells from an unlimited source of cells such as glucose-responsive stem cell derived cells or xenogeneic cells;

2. Conducting pre-clinical research programs in other therapeutic indications for our platform Cell Pouch™ technology including: hemophilia, thyroid disease, and other chronic diseases that require a hormone, protein or other factor which is missing or in short supply in the body;
3. Development of various sources of therapeutic cells for transplantation within our Cell Pouch™, including, depending on the clinical application, autologous cells, allogeneic cells such as donor cells or glucose responsive stem cell derived cells that could be used to treat large numbers of patients as well as xenogeneic cells;
4. Identification and development of complementary technologies which may improve the safety and efficacy of cells within the Cell Pouch™, including local immune protection technologies such as microencapsulation;

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5. Manufacturing and supply of the Cell Pouch™ and the processing and supply of therapeutic cells;
6. Generation and/or licensing of intellectual property; and,
7. Developing partnerships with pharmaceutical Companies in the development of our products.

#### **Corporate Update for the nine months ended July 31, 2016 and to the date of this MD&A**

In December 2015, the European Commission's Horizon 2020 program awarded a €5.6 million (approximately \$8.5 million) non-dilutive grant to the HemAcure consortium, which consists of Sernova Corp. and five European academic and private partners. The purpose is to advance the development of a GMP clinical grade factor VIII releasing therapeutic cell product in combination with Sernova's Cell Pouch™ for the treatment of severe hemophilia A, a serious genetic bleeding disorder caused by missing or defective factor VIII in the blood stream. The therapeutic goal of the product is to use the patient's own cells corrected for the factor VIII gene. These cells placed in the implanted Cell Pouch™ are expected to release factor VIII on a continual basis at a rate that would be expected to significantly reduce disease-associated hemorrhaging and joint damage. The constant delivery of factor VIII is also expected to reduce or eliminate the need for multiple weekly infusions which is the current standard of care using plasma-derived or recombinant, genetically engineered factor VIII for the prophylactic treatment of hemophilia A. In January 2016, the Company received an initial funding payment related to the grant in the amount of €566,607 (approximately \$873,000).

In January 2016, we entered into a service agreement with the Centre for Commercialization of Regenerative Medicine (CCRM) to establish, optimize and validate Sernova's licensed technology for creating stem cell derived therapeutic cells that produce insulin and are glucose responsive. Partnership with CCRM's expertise in developing production processes for cellular therapies is an important step in our plan to commercialize an unlimited supply of glucose responsive, insulin producing cells for the Cell Pouch System™ to be able to address the broader population of patients with insulin dependent diabetes.

In February 2016, we were selected as a member of the "2016 TSX Venture 50" and ranked fourth in the Life Sciences and Clean Technologies category based on a number of key measures of market performance, including market capitalization growth, share price appreciation and trading volume. The TSX ranked companies from among the 1,791 companies listed on the TSX Venture Exchange as of December 31, 2015.

In June 2016, we closed a \$4,200,000 non-brokered private placement. The offering consisted of 16,800,000 units sold at a price of \$0.25 per unit. Each unit consists of one common share and one common share purchase warrant, with each warrant entitling the holder thereto to purchase one common share of the company for a period of 24 months at a price of \$0.35 per share, subject to abridgement of the exercise period (after the expiry of the 4 month hold period) with 30 days' notice to holders in the event that the twenty-day volume weighted average price of the Company's common share shares exceeds \$0.50.

In July 2016, we entered into a research funding agreement with the Juvenile Diabetes Research Foundation (JDRF), which will provide Sernova up to US \$2.45 million to support a safety and efficacy human clinical trial using Sernova's Cell Pouch™ technologies. The study will be conducted in the United States for treatment of hypoglycemia unawareness patients with severe type 1 diabetes. The goal of the Phase I/II safety and efficacy study is to provide patients with hypoglycemia unawareness a novel cell therapy treatment utilizing Sernova's proprietary, highly vascularized, cell macroencapsulated implantable and scalable device to reduce or eliminate the need for injections of exogenous insulin.

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#### **Research and Development Outlook for the 2016 Calendar Year**

Our product development program for 2016 includes the following:

- Continued clinical evaluation of the Cell Pouch™ in patients with insulin-dependent diabetes receiving an islet transplant;
- HemAcure consortium product development work relating to a treatment for hemophilia A consisting of factor VIII releasing therapeutic cells transplanted within Sernova's Cell Pouch™;
- Initiation of IND-enabling studies for thyroid disease using Sernova's Cell Pouch™ technologies in preparation for human evaluation in a clinical trial;
- Human stem cell differentiation, characterization and production of progenitor cells for diabetes and initiation of *in vivo* proof of principle assessment of these cells for their safety and efficacy within Sernova's Cell Pouch™ for the treatment of insulin-dependent diabetes;
- Development and assessment of complementary local immune protection technologies, to further develop and expand Sernova's therapeutic vision for diabetes of a product consisting of locally immune protected therapeutic cells within the Cell Pouch™ using an unlimited source of cells for the future treatment of people with insulin-dependent diabetes; and,
- Collaborating with pharmaceutical companies to assess safety and efficacy of our combined technologies in preclinical studies for potential development of a licensing arrangement and development partnership.

#### **Sernova's Cell Pouch System™**

The Cell Pouch™ was uniquely designed and patented to take into consideration the biological requirements of therapeutic cells. A tissue matrix rich in microvessels develops within the Cell Pouch™ environment when implanted subcutaneously or in other locations prior to islet transplantation. The Cell Pouch™ is believed to provide an ideal environment consisting of tissue lined vascularized tissue chambers for therapeutic cells, including insulin-producing islets. We believe these conditions are key for maintaining long-term survival and function of therapeutic cells. We have demonstrated in a series of ISO10993 biocompatibility studies and multiple animal studies that the Cell Pouch™ is biocompatible and safe. Long-term studies in multiple animal models have demonstrated that the islets become well-supported with microvessels as in their natural pancreatic environment following islet transplantation into the Cell Pouch™.

An independent pre-clinical study published in the journal *Transplantation* (Transplantation 2015 Nov: 99 (11):2294-300) demonstrated that the Cell Pouch™ with islets provided insulin independence for the length of the study (100 days) in a small animal model of diabetes using a marginal transplanted islet mass where over 95% of the animals achieved insulin independence. This study supports the concept that the Cell Pouch™ may require a smaller than anticipated number of cells to achieve efficacy, one of the parameters under consideration for further human clinical evaluation to achieve glucose control in patients with diabetes.

Benefits of the Cell Pouch™ are anticipated to be enhanced long-term islet graft survival and function. It is important for islets to have close contact with microvessels to monitor blood glucose levels and produce the appropriate amount of insulin throughout the day and night and after meals. We believe the Cell Pouch™ technologies achieve this ideal islet/microvessel connection through alteration of the subcutaneous environment and should allow for improved glucose control. Our studies have shown that the Cell Pouch™ with islets can control glucose levels in small and large animal models of diabetes over extended periods.

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#### **Clinical Development of the Cell Pouch™ in Diabetes**

Sernova's lead program is the clinical development of the Cell Pouch™ for treatment of patients with insulin-dependent diabetes. A proof of concept, first in human clinical study to evaluate the Cell Pouch™ with donor islets, in insulin-dependent diabetic subjects with hypoglycemia unawareness who are receiving islet transplantation, has demonstrated safety of the Cell Pouch™ alone and with transplanted islets and survival of the well-vascularized islets within the Cell Pouch™. Furthermore, the islets were shown in histological analysis to be able to make insulin, glucagon and somatostatin, key hormones in the control of blood glucose levels.

The Edmonton Protocol is the current standard of care cell-based treatment for insulin-dependent diabetic patients with hypoglycemia unawareness that involves infusing donor pancreatic islets, often from multiple donors, into a patient's liver portal vein, followed by life-long administration of immunosuppressive drugs to prevent rejection of the transplant. Overall, benefits of islet transplantation may include a reduction in the incidence of hypoglycemia unawareness, a reduced requirement for exogenous insulin and reduced diabetes-induced microvascular damage and potential insulin independence. It is believed, however, following islet infusion that with portal vein delivery of islets, there is an initial significant reduction in surviving islets due to an immediate blood-mediated inflammatory reaction, which may damage and destroy a significant proportion of the islets infused into the portal vein. In addition, the proportion of patients with insulin-independence decreases over time likely due to continued islet destruction with multiple etiologies. A further limitation is that infusion of cells into the portal vein is limited to donor islets and is not amenable to advanced technologies such as glucose-responsive insulin producing stem cell derived cells or xenogeneic cells being developed to overcome the limited supply of donor islet cells, as these cell technologies must be transplanted into an implantable and removable device for safety reasons.

We believe the immediate blood-mediated inflammatory reaction may also be mitigated, as the therapeutic cells are surrounded by microvessels similar to the islets' natural microenvironment in the pancreas rather than being bathed in a constant flow of blood with immune reactive cells. This reduced inflammatory response should enable improved islet survival and potentially lead to the need to implant fewer islets or other sources of insulin producing cells. In the case of donor islets, this could potentially enable patients with diabetes to be treated with fewer donor pancreata than are currently being used. It can take up to three pancreata to treat a single patient and achieve a reduction in insulin injections using the Edmonton Protocol.

The Cell Pouch™ enables islets to be transplanted subcutaneously or even in the omentum space, which we believe will offer significant advantages over portal vein delivery as it can be monitored, imaged and if required, retrieved and replaced. Known side effects from infusion of cells into the portal vein such as portal vein hypertension, thrombosis, and liver steatosis (fatty liver), along with the costs of treating them, will be eliminated as cells will not be placed in this location.

While the therapeutic cells within the Cell Pouch™ may function with systemic immune protection, it may also accommodate local immunoprotection technologies reducing or eliminating the need for lifelong systemic antirejection drug treatment. Local immune protection of islets such as microencapsulation could result in a significant reduction or elimination of the need for antirejection drugs and their ongoing prohibitive costs, as well as associated healthcare costs related to side effects of these drugs. In addition, local immunoprotection may provide a safer environment for the transplanted islets.

Finally, the Cell Pouch™ could be used with a variety of sources of cells, such as glucose responsive insulin producing cells derived from stem cells or xenogeneic cells, addressing the limited availability of donors and

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allowing the widespread treatment of insulin-dependent diabetes. Thus, we believe our approach and its ease of use may provide an opportunity for the Cell Pouch™ to become the standard of care in therapeutic cell transplantation, if it proves to be safe and effective in clinical trials. Sernova believes it has the only such device technology of its kind in which therapeutic cells have been proven to survive in a tissue matrix integrated with microvessels in close association with the therapeutic cells.

In our human clinical trial, subjects have been implanted with the Cell Pouch™, which is allowed to incorporate with tissue and microvessels prior to transplantation of donor human islets. In this first-in-human study, to prevent islet graft rejection, patients have been treated with the state of the art standard of care Alemtuzumab-induction protocol and provided maintenance immunosuppression.

Our results have shown the following important findings:

- First, biocompatibility and a positive safety profile of the Cell Pouch™ have been shown in the patients. Safety is the primary endpoint of the clinical study;
- Second, the islets within the Cell Pouch™, as shown by histological analysis, are well-vascularized, living within a natural tissue matrix and are able to make insulin, glucagon and somatostatin, key hormones in the control of blood glucose levels. We believe such revascularization of islets and islet metabolic function within an implantable medical device for therapeutic cells in humans in this patient population is a first in the regenerative medicine field; and,
- Based on these encouraging results from the study, we believe that Sernova's Cell Pouch™ may form a suitable environment for the survival and function of multiple types of therapeutic cells for a range of diseases.
- Based on these initial findings, we plan to conduct additional clinical evaluation of our Cell Pouch™ technologies to further assess the safety and efficacy of the Cell Pouch™ under optimized conditions.

### **Developing the Cell Pouch™ for Other Indications**

#### *Hemophilia*

As part of our strategy to develop the Cell Pouch™ for various therapeutic indications, we are evaluating Sernova's Cell Pouch™ for the treatment of patients with hemophilia A.

This approach involves taking a small blood sample from the patient, correcting the genetic defect in isolated cells and then expanding the cell numbers for placement into Sernova's Cell Pouch™ for constant release of factor VIII. Initial proof of concept studies have been conducted by Sernova and a European team of experts forming a consortium called HemAcure. The HemAcure consortium was successful in obtaining €5.6 million (approximately \$8.5 million), funded by a European Commission's Horizon 2020 grant, to develop a GMP human cell product suitable for human clinical testing for the completion of safety and efficacy studies in the Cell Pouch™ as part of a regulatory package in preparation for human clinical testing.

#### *New Cell Pouch™ Indications for Metabolic Disorders*

As the Company continues its work on the diabetes and hemophilia indications, we are exploring new indications to further expand the application of our cell therapy platform technologies including for the treatment of thyroid disease.

### **Local Immune Protection & Other Complementary Technologies**



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To broaden Sernova's local immune protection technologies, we continue to evaluate additional advanced technologies such as microencapsulation. We believe that microencapsulation of therapeutic cells within the Cell Pouch™ may provide a means to contain therapeutic cells within the Cell Pouch™ while providing close association of therapeutic cells with the required microvessels and tissue matrix for long-term survival and function of cells for our disease indications.

#### **Alternative Sources of Cells**

Our transplantation technologies may incorporate autologous cells, donor cells or other sources of cells including therapeutic cells derived from human stem cells or islets derived from xenogeneic sources, depending on the clinical indication under evaluation and the need for expanded numbers of cells for treatment of larger populations. As such, we will continue to work with academic collaborators and industry partners to identify and secure the required cells for our therapeutic indications. In this regard, Sernova has signed a license agreement with the University Health Network of Toronto (UHN) to gain access to worldwide, exclusive rights to certain patent-pending technologies developed by UHN researchers, for the advancement of glucose-responsive insulin-producing stem cells for the treatment of patients with insulin-dependent diabetes. Tech-transfer, process development and cell-production processes are under way to achieve a high standard of production of cells which consistently meet strict release criteria for evaluation of these cells in Sernova's Cell Pouch™.

Sernova is also committed to working with pharmaceutical and academic partners to evaluate various, insulin-producing cell technologies that use different approaches, with a goal of combining Sernova and partner technologies to create best in class products. In this regard, Sernova has signed several agreements to test and evaluate several insulin-producing cell technologies in our Cell Pouch™. Sernova plans to continue to develop multiple collaborations with pharmaceutical companies for establishment of potential long-term licensing and co-development relationships.

#### **Manufacturing**

Our contract manufacturing process has enabled manufacture of both our Cell Pouch™ and mini-Cell Pouch™ technologies for preclinical and clinical evaluation in a number of clinical indications. Device specifications have been set, a semi-automated manufacturing process developed and the product manufactured, packaged and sterilized under strict regulatory guidelines (ISO 13485:2003) suitable for testing in clinical trials in North America and Europe. Sterilization verification studies have been completed and the product has been released for assessment in human clinical trials by Health Canada and for potential clinical trials in other regulatory jurisdictions. A two-year packaging and product stability study has been successfully completed demonstrating stability of the product and packaging over this time-period.

#### **Intellectual Property**

Our patent portfolio currently consists of issued and pending patents in eight families covering our enabling platforms. We strive to obtain broad claims in our patents, including exclusivity of our Cell Pouch™ device and related technologies in combination with a wide range of therapeutic cell technologies including glucose-responsive insulin producing stem cell derived cells and to treat a number of chronic diseases. Importantly, our Cell Pouch™ patents extend to 2030. We intend to continue to expand our patent and licensing portfolio through proprietary internal inventions as well as strategic in-licensing, to maximize the commercial potential for our platform technologies.

## **RESULTS OF OPERATIONS**

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**Selected Financial Information**

Selected financial information from the statements of loss and comprehensive loss for the three and nine months ended July 31, 2016 and 2015, were as follows:

<i>(all amounts in Canadian Dollars)</i>	Three months ended July 31,		Nine months ended July 31,	
	2016	2015	2016	2015
Research and development expenses	\$ 497,891	\$ 311,225	\$ 1,273,239	\$ 1,296,171
General and administrative expenses	489,399	361,017	1,036,363	697,604
Loss and comprehensive loss for the period	\$ 964,947	\$ 666,855	\$ 2,333,314	\$ 1,973,361

For the three months ended July 31, 2016, the Company recorded a loss of \$964,947 or \$0.01 per common share, compared to \$666,855 or \$0.00 per common share in the prior year, an increase of \$298,092 or 44.7%. The higher loss in the three months ended July 31, 2016 over the comparable period in the prior fiscal year, was a result of increases in research and development as well as general and administrative expenses. The changes in research and development and general and administrative expenses for the three months ended July 31, 2016 and 2015 are described in greater detail in the following sections of this MD&A.

For the nine months ended July 31, 2016, the Company recorded a loss of \$2,333,314 or \$0.02 per common share, compared to \$1,973,361 or \$0.01 per common share in the prior year, an increase of \$359,953 or 18.2%. The higher loss in the nine months ended July 31, 2016 over the comparable period in the prior fiscal year, was a result of an increase in general and administrative expenses that was partially offset by a decrease in research and development expenses. However, excluding non-cash items, research and development expenses increased during the nine months ended July 31, 2016 compared to the equivalent period in the prior fiscal year. The changes in research and development and general and administrative expenses for the nine months ended July 31, 2016 and 2015 are described in greater detail in the following sections of this MD&A.

**Research and Development Expenses**

Research and development expenditures for the three and nine months ended July 31, 2016 and 2015, were as follows:

<i>(all amounts in Canadian Dollars)</i>	Three months ended July 31,		Nine months ended July 31,	
	2016	2015	2016	2015
Salaries, supplies and contract payments	\$ 393,269	\$ 231,131	\$ 1,088,107	\$ 740,227
Patent fees and costs	78,436	101,936	162,147	151,068
Depreciation of property and equipment	1,776	1,189	5,328	3,567
Amortization of intangible assets	-	-	-	492,075
Share-based compensation	98,583	25,260	221,475	54,234
Contributions and tax credits	(74,173)	(48,391)	(203,818)	(145,000)
<b>Total</b>	<b>\$ 497,891</b>	<b>\$ 311,225</b>	<b>\$ 1,273,239</b>	<b>\$ 1,296,171</b>

Total research and development expenses, for the three months ended July 31, 2016, increased by \$186,666 compared to the equivalent period of the prior fiscal year. Excluding the impact of depreciation of property and

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equipment, and share-based compensation, all non-cash items, research and development expenses were \$397,512 during the three months ended July 31, 2016, an increase of \$112,756 compared to the equivalent period in the prior fiscal year. Salaries, supplies and contract payments, for the three months ended July 31, 2016, increased by \$162,138, compared to the equivalent period of the prior fiscal year. The increase was due to greater salaries and research and development contract payments in the three months ended July 31, 2016, compared to the same period in the previous fiscal year. Share-based compensation for the three months ended July 31, 2016, increased by \$73,223, due to greater stock-based compensation attached to the stock options granted in fiscal 2015 and 2016, as compared to the grant in the prior fiscal year. Contributions and tax credits, for the three months ended July 31, 2016, increased by \$25,782, compared to the equivalent period of the prior fiscal year, due to more tax credits and support from the European Commission's Horizon 2020 grant being recognized during the three months ended July 31, 2016 than in the same period of the previous fiscal year.

Total research and development expenses, for the nine months ended July 31, 2016, decreased by \$22,932 compared to the equivalent period of the prior fiscal year. Excluding the impact of depreciation of property and equipment, amortization of intangible assets and share-based compensation, all non-cash items, research and development expenses were \$1,046,436 during the nine months ended July 31, 2016, an increase of \$300,141 compared to the equivalent period in the prior fiscal year. Salaries, supplies and contract payments, for the nine months ended July 31, 2016, increased by \$347,880, compared to the equivalent period of the prior fiscal year. The increase was due to greater salaries and research and development contract payments in the nine months ended July 31, 2016, compared to the same period in the previous fiscal year. Amortization of intangible assets, for the nine months ended July 31, 2015, decreased by \$492,075, compared to the equivalent period of the prior fiscal year, due to the intangible assets that were fully amortized at April 30, 2015. Share-based compensation for the nine months ended July 31, 2016, increased by \$167,241, due to greater stock-based compensation attached to the stock options granted in fiscal 2015 and 2016, as compared to the grant in the prior fiscal year. Contributions and tax credits, for the nine months ended July 31, 2016, increased by \$58,818, compared to the equivalent period of the prior fiscal year, due to more tax credits and support from the European Commission's Horizon 2020 grant being recognized during the nine months ended July 31, 2016, compared to the amounts recognized in the same period of the previous fiscal year.

The Company expects to pay certain future costs related to its pre-clinical and clinical trials. Such payments are expected to include the cost of clinical staff and overhead thereon, trial insurance, and may include travel and a portion of drug or procedure-related expenses or transplantation expenses not covered by insurance. The total payments over the duration of the trials will be impacted by such factors as the rate of enrollment, the jurisdiction in which the patient resides and the specifics of patient insurance.

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**General and administrative expenses**

General and administrative costs for the three and nine months ended July 31, 2016 and 2015, were as follows:

<i>(all amounts in Canadian Dollars)</i>	Three months ended July 31,		Nine months ended July 31,	
	2016	2015	2016	2015
Salaries, benefits and consulting fees	\$ 229,840	\$ 162,741	\$ 332,638	\$ 197,110
Professional fees	12,774	20,438	57,739	94,202
Director fees and benefits	25,500	27,794	76,296	84,670
Investor relations	45,176	34,457	154,308	112,557
Travel and other costs	29,094	35,848	127,027	121,043
Depreciation of property and equipment	115	31	345	93
DSU's issued for director compensation	39,335	10,767	100,478	10,767
Share-based compensation	107,565	68,941	187,532	77,162
<b>Total</b>	<b>\$ 489,399</b>	<b>\$ 361,017</b>	<b>\$ 1,036,363</b>	<b>\$ 697,604</b>

General and administrative expenses consist mainly of professional fees, personnel costs related to corporate activities, costs for shareholder-related activities including investor relations, director's fees, stock exchange fees and share-based compensation.

Total general and administrative expenses, for the three months ended July 31, 2016, increased by \$128,382, as compared to the same period in the prior year. Excluding the impact of depreciation of property and equipment, DSU's issued for director compensation and share-based compensation, all non-cash items, total general and administrative expenses were \$342,384 during the nine months ended July 31, 2016, an increase of \$61,106 compared to the equivalent period in the prior fiscal year. Salaries, benefits and consulting fees, for the three months ended July 31, 2016, increased by \$67,099 compared to the same period in the prior year, due to financial advisory fees incurred in the three months ended July 31, 2016. The expense related to deferred share units (DSU's) issued for director's compensation increased by \$28,568 for the three months ended July 31, 2016, compared to the same period in the prior year due to a second DSU grant issued in March 2016. Share-based compensation for the three months ended July 31, 2016, increased by \$38,624, due to greater stock-based compensation attached to the stock options granted in fiscal 2015 and 2016, as compared to the grant in the prior fiscal year.

Total general and administrative expenses, for the nine months ended July 31, 2016, increased by \$338,759, as compared to the same period in the prior year. Excluding the impact of depreciation of property and equipment and share-based compensation, both non-cash items, general and administrative expenses was \$748,008 during the nine months ended July 31, 2016, an increase of \$138,426 compared to the equivalent period in the prior fiscal year. Salaries, benefits and consulting fees, for the nine months ended July 31, 2016, increased by \$135,528 compared to the same period in the prior year, due to financial advisory fees incurred in the nine months ended July 31, 2016. Professional fees, for the nine months ended July 31, 2016, decreased by \$36,463, compared to the same period in the prior year, primarily due to decreased legal and consulting costs related to the Company's Annual General Meeting and other general corporate matters during the nine months ended July 31, 2016 as compared to the equivalent period in the prior year. Investor relations expenses, for the nine months ended July 31, 2016, increased by \$41,751, compared to the same period in the prior year, primarily due to increased costs related to additional international investor relations activities during the nine months ended July 31, 2016. The expense related to DSU's issued for director's compensation increased by \$89,711 for the nine months ended July 31, 2016, compared to the same period in the prior year due to the fiscal

**SERNOVA CORP.****MANAGEMENT'S DISCUSSION AND ANALYSIS****FOR THE THREE AND NINE MONTHS ENDED JULY 31, 2016 AND 2015**

2015 grant being outstanding for a full year as well as the second DSU grant issued in March 2016. Share-based compensation for the nine months ended July 31, 2016, increased by \$110,370, due to greater stock-based compensation attached to the stock options granted in fiscal 2015 and 2016, as compared to the grant in the prior fiscal year.

**Other items**

	Three months ended July 31,		Nine months ended July 31,	
	2016	2015	2016	2015
Finance income	\$ (9,402)	\$ (8,298)	\$ (21,059)	\$ (24,321)
Finance costs (excluding exchange)	2,956	1,190	7,039	2,562
Exchange loss (gain)	<u>(15,897)</u>	<u>1,721</u>	<u>37,732</u>	<u>1,345</u>
Finance costs (including exchange)	<u>(12,941)</u>	<u>2,911</u>	<u>44,771</u>	<u>3,907</u>
Net finance costs (income)	\$ (22,343)	\$ (5,387)	\$ 23,712	\$ (20,414)

**Finance income**

Finance income, represented primarily by interest income earned on the Company's cash and marketable securities and net foreign exchange gains, was \$9,402 and \$21,059, during the three and nine months ended July 31, 2016, respectively, compared to \$8,298 and \$24,321, for the same periods in the prior fiscal year. The increase during the three months ended July 31, 2016 compared to the equivalent period of the prior fiscal year was primarily related to higher interest income from an increased average balance of cash and marketable securities due to the Company's June 2016 private placement. The decrease during the nine months ended July 31, 2016 compared to the equivalent period of the prior fiscal year was primarily due to lower interest income from a decrease in the average balances of cash and marketable securities in the nine months ended July 31, 2016.

**Finance costs**

Finance costs, represented primarily by bank charges and foreign exchange were \$12,941 (gain) and \$44,771 (loss), during the three and nine months ended July 31, 2016, respectively, compared to \$2,911 and \$3,907, for the same periods in the prior fiscal year. The gain for the three months ended July 31, 2016 compared to the equivalent period of the prior fiscal year was primarily due to foreign exchange gains due to the appreciation of the US dollar compared to the Canadian dollar over that period. The increase for the nine months ended July 31, 2016 compared to the equivalent period of the prior fiscal year was primarily due to foreign exchange losses incurred from a €566,507 payment received related to the European Commission's Horizon 2020 grant in January 2016.

**Income taxes**

Income taxes have not been recognized in profit and loss to date, as the Company has been incurring losses since inception, and it is not probable that future taxable profits will be available against which the accumulated tax losses can be utilized. Accordingly, the Company has substantial deferred tax assets that have not been recognized in the financial statements that would be available to shelter potential future taxable income from income taxes. See Note 12 to the Company's audited consolidated financial statements for the years ended October 31, 2015 and 2014, for further details related to the Company's income tax position.

**SERNOVA CORP.**

## MANAGEMENT'S DISCUSSION AND ANALYSIS

FOR THE THREE AND NINE MONTHS ENDED JULY 31, 2016 AND 2015

**LIQUIDITY AND CAPITAL RESOURCES**

Selected financial information from the statements of financial position as at July 31, 2016 and October 31, 2015, were as follows:

As At <i>(all amounts in Canadian Dollars)</i>	July 31, 2016	October 31, 2015
Cash and marketable securities	\$ 6,189,734	\$ 2,880,963
Total assets	6,468,553	3,153,299
Current liabilities	1,098,984	199,850
Share capital, warrants and contributed surplus	37,355,987	32,606,553
Deficit	\$(31,986,418)	\$(29,653,104)

As at July 31, 2016, the Company had cash and marketable securities of \$6.2 million compared to \$2.9 million as at October 31, 2015. The increase in cash and marketable securities, total assets and share capital, warrants and contributed surplus relate primarily to a non-brokered private placement for gross cash proceeds of \$4,200,000 completed in June 2016. The offering consisted of 16,800,000 units sold at a price of \$0.25 per unit. The increase in current liabilities relates primarily to the remaining portion of the European Commission's Horizon 2020 program grant in the amount of \$749,497 (see Note 7). Management believes the Company has sufficient working capital to maintain its operations for at least the next twelve months.

The Company does not have any debt or credit facilities.

**Financing Activities**

In July 2016, the Company was awarded a US\$2.45 million (approximately \$3.2 million) grant under an agreement with JDRF Therapeutics Fund, LLC ("JDRF"). The grant supports a human clinical trial of Sernova's Cell Pouch™ technologies for treatment of hypoglycemia unawareness patients with severe type 1 diabetes at a major transplantation center in the United States. Pursuant to the agreement with JDRF, the Company has committed to perform certain clinical trial activities and to use commercially reasonable efforts to introduce a diabetes product into a major market. Further, the agreement creates a commitment for repayment by the Company following successful commercialization of a diabetes product.

In June 2016, the Company completed a non-brokered private placement for gross cash proceeds of \$4,200,000. The offering consisted of 16,800,000 units sold at a price of \$0.25 per unit. Each unit consisted of one common share and one common share purchase warrant, with each warrant entitling the holder to purchase one common share of the Company for a period of 24 months at a price of \$0.35 per share, subject to abridgement of the exercise period (after the expiry of the 4 month hold period) with 30 days' notice to holders in the event that the twenty-day volume weighted price of the Company's common shares exceeds \$0.50. The warrants were ascribed a value of \$nil representing the difference between the issue price of the units and the fair market value of the shares received as part of the offering.

Costs associated with the private placement totaled \$258,324, including cash fees of \$200,121 and the issue of 521,850 finder's warrants valued at \$58,203, which have been deducted from the gross proceeds. Each finder's warrant entitles the holder to purchase one common share of the Company for a period of 24 months at a price of \$0.35 per share, subject to the same hold and abridgement conditions as the warrants included in each unit of the offering.

For the nine months ended July 31, 2016, 1,298,750 stock options were exercised for gross cash proceeds of \$200,612 and 131,528 warrants were exercised for gross cash proceeds of \$39,458.

## **SERNOVA CORP.**

### **MANAGEMENT'S DISCUSSION AND ANALYSIS**

**FOR THE THREE AND NINE MONTHS ENDED JULY 31, 2016 AND 2015**

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In May 2015, the Company completed a non-brokered private placement for gross cash proceeds of \$1,600,000. The offering consisted of 8,888,889 units sold at a price of \$0.18 per unit. Each unit consisted of one common share and one common share purchase warrant, with each warrant entitling the holder to purchase one common share of the Company for a period of 24 months at a price of \$0.30 per share, subject to abridgement of the exercise period (after the expiry of the 4 month hold period) with 30 days' notice to holders in the event that the twenty-day volume weighted price of the Company's common shares exceeds \$0.50. The warrants were ascribed a value of \$nil representing the difference between the issue price of the units and the fair market value of the shares received as part of the offering.

Costs associated with the private placement totaled \$87,167, including cash fees of \$75,873 and the issue of 137,151 finder's warrants valued at \$11,294, which have been deducted from the gross proceeds. Each finder's warrant entitles the holder to purchase one common share of the Company for a period of 24 months at a price of \$0.30 per share, subject to the same hold and abridgement conditions as the warrants included in each unit of the offering.

For the nine months ended July 31, 2015, 1,125,000 stock options were exercised for gross cash proceeds of \$177,150.

In December 2015, the Company was awarded a €5.6 million (approximately \$8.5 million) non-dilutive grant by the European Commission's Horizon 2020 program, as part of a consortium. The Company expects to receive total funding in the amount of €944,178 (approximately \$1.4 million), representing its portion of the grant, based upon the terms of the grant agreement. In January 2016, the Company received an initial funding payment related to the grant in the amount of €566,507 (approximately \$873,000), which contributed to the increase in current liabilities at July 31, 2015 as compared to October 31, 2015.

Historically, funding requirements have been met through the issuance of common shares from treasury and common share purchase warrants that are converted into common shares upon exercise. Management regularly monitors the capital markets and attempts to balance timing of new equity issues with the progress of our research and clinical development plan, general market conditions, and availability of capital. In addition, management actively targets additional sources of capital, such as grants and contributions, as well as collaborative partners which would assist in progressing our operations and research and clinical development programs.

We anticipate the cash requirements to fund our planned activities for 2016 will increase over the previous year. Our actual cash requirements for 2016 will depend on the clinical, pre-clinical, and collaboration activities that we ultimately undertake and the ability to secure partners, and non-dilutive funding in the form of government grants.

The interim condensed consolidated financial statements have been prepared using IFRS that are applicable to a going concern, which contemplates the realization of assets and settlement of liabilities in the normal course of business for the foreseeable future. The Company has experienced operating losses and cash outflows from operations since its inception, and accordingly, it will require ongoing financing in order to continue its research and development activities. In addition, it has not yet earned significant revenue or reached successful commercialization of its products. The company will seek new funding from additional equity financings and/or licensing agreements and collaboration arrangements with development partners; however, there is no assurance that these funding initiatives will be successful.

**SERNOVA CORP.**

## MANAGEMENT'S DISCUSSION AND ANALYSIS

FOR THE THREE AND NINE MONTHS ENDED JULY 31, 2016 AND 2015

**Common Shares**

The following table reflects the changes in the number of issued common shares from the most recent year ended October 31, 2015 to the date of this MD&A:

	Number of Common Shares
Balance as at October 31, 2015	141,821,720
Shares issued related to private placement	16,800,000
Shares issued on the exercise of stock options	1,298,750
Shares issued on the exercise of warrants	131,528
Balance as at July 31, 2016	160,051,998
Performance escrow shares returned to treasury	(3,472,500)
Balance as at September 27, 2016	156,579,498

**Performance Escrow Shares**

Included in issued common shares and representing escrow shares as at July 31, 2016 are 3,472,500 (October 31, 2015 – 3,472,500) common shares which will not be released, transferred or assigned without the consent of the regulatory authorities, and which shares are subject to performance-based release terms as follows:

- a) 1,736,250 common shares on the date the Company receives approval from authorities for the initiation of human trials for a licensed product involving Sertolin<sup>TM</sup>;
- b) 1,736,250 common shares on the date the Company enrolls the first patient in a Phase 3 human clinical efficacy trial for a licensed product involving Sertolin<sup>TM</sup>.

Pursant to an agreement related to Sertoli Technologies Inc., the Company's obligation to release performance shares expired in August 2016 and 3,472,500 issued and outstanding performance escrow shares were returned to treasury and cancelled.



**SERNOVA CORP.**

## MANAGEMENT'S DISCUSSION AND ANALYSIS

FOR THE THREE AND NINE MONTHS ENDED JULY 31, 2016 AND 2015

**Warrants**

The following table reflects the changes in the number of issued warrants from the most recent year ended October 31, 2015 to the date of this MD&A:

	Number of Warrants	Weighted Average Exercise Price
Balance as at October 31, 2015	19,026,040	\$ 0.35
Warrants issued related to private placement	17,321,850	0.35
Exercised	(131,528)	0.30
Expired	(10,000,000)	0.40
Balance as at July 31, 2016 and September 27, 2015	26,216,362	\$ 0.33

The warrants outstanding as at July 31, 2016 are described in Note 8 to the unaudited interim condensed consolidated financial statements for the three and nine months ended July 31, 2016 and 2015.

**2015 Incentive Plan**

The Company has a 2015 Incentive Plan (the "Plan"), the terms of which were most recently approved by shareholders of the Company on April 29, 2016. The Plan includes both stock options and deferred share units ("DSU's"). Further details on the Company's 2015 Incentive Plan are provided in Note 8 to the unaudited interim condensed consolidated financial statements for the three and nine months ended July 31, 2016 and 2015.

The following table reflects the changes in the number of issued stock options from the most recent year ended October 31, 2015 to the date of this MD&A:

	Number of Options	Weighted Average Exercise Price
Balance as at October 31, 2015	8,873,750	\$ 0.19
Granted	3,393,600	0.24
Forfeited	(370,000)	0.25
Exercised	(1,298,750)	0.15
Balance as at July 31, 2016	10,598,600	0.21
Forfeited	(62,500)	0.24
Balance as at September 27, 2016	10,536,100	\$ 0.21

## SERNOVA CORP.

### MANAGEMENT'S DISCUSSION AND ANALYSIS

#### FOR THE THREE AND NINE MONTHS ENDED JULY 31, 2016 AND 2015

The following table reflects the changes in the number of issued deferred share units (DSU's) from the most recent year ended October 31, 2015 to the date of this MD&A:

	Number of DSU's
Balance as at October 31, 2015	625,000
Granted	450,000
Balance as at July 31, 2016 and September 27, 2016	1,075,000

### COMMITMENTS AND CONTINGENCIES

The Company expects to pay certain future costs related to its pre-clinical and clinical trials. Such payments are expected to include the cost of clinical staff and overhead thereon, trial insurance, and may include travel and a portion of drug or procedure-related expenses or transplantation expenses not covered by insurance. The total payments over the duration of the trial will be impacted by such factors as the rate of enrollment, the location in which the patient resides and the specifics of patient insurance.

By participating in the HemAcure consortium and accepting grant funding, the Company has committed to perform certain product development activities, as outlined in the grant agreement with the European Commission's Horizon 2020 program. While it is anticipated that the funding that has been received and further funding expected to be received by the Company will cover most of the costs expected to be incurred related to the planned product development activities, the actual amount of effort and the related costs may differ from what was expected and may be more than the maximum amounts the European Commission has agreed to cover. Accordingly, any excess costs required to complete the activities would become the Company's responsibility. Under the grant agreement, consortium members may also shift the funding allocated under the grant between members in order to cover excess costs, so the Company may ultimately receive a different amount of funding than currently expected. The project is subject to a number of risks and uncertainties, and in particular the risks outlined under the risk factor titled '*Dependence on collaborative partners, licensors, contract manufacturer and others*', please refer to the risk factors discussed elsewhere in this MD&A and included in the annual MD&A for the years ended October 31, 2015 and 2014.

In July 2016, the Company was awarded a US\$2.45 million (approximately \$3.2 million) grant under an agreement with JDRF Therapeutics Fund, LLC ("JDRF"). The grant supports a human clinical trial of Sernova's Cell Pouch™ technologies for treatment of hypoglycemia unawareness patients with severe type 1 diabetes at a major transplantation center in the United States. Pursuant to the agreement with JDRF, the Company has committed to perform certain clinical trial activities and to use commercially reasonable efforts to introduce a diabetes product into a major market. Further, the agreement creates a commitment for repayment by the Company following successful commercialization of a diabetes product.

The Company entered into a lease commitment beginning on August 1, 2015, with remaining gross payments required under the lease of approximately \$68,000 related to the rental of laboratory space over a period of two years. The lease also includes options for the Company to extend the lease for two additional one year periods.

**SERNOVA CORP.****MANAGEMENT'S DISCUSSION AND ANALYSIS****FOR THE THREE AND NINE MONTHS ENDED JULY 31, 2016 AND 2015****RELATED PARTY TRANSACTIONS**

The key management personnel of the company are the Directors, the President and Chief Executive Officer and the Chief Financial Officer.

Amounts due to related parties, including amounts due to key management personnel, at the period-end are unsecured, interest free and settlement generally occurs in cash. There have been no guarantees provided or received for any related party receivables or payables. Included in accounts payable and accrued liabilities at July 31, 2016 was \$nil due to key management personnel (October 31, 2015 – \$2,121).

Compensation to key management personnel for the three and nine months ended July 31, 2016 and 2015, was as follows:

<i>(all amounts in Canadian Dollars)</i>	Three months ended July 31,		Nine months ended July 31,	
	2016	2015	2016	2015
Salaries, benefits and consulting fees	\$ 156,347	\$ 95,219	\$ 426,908	\$ 264,414
Director fees and benefits	24,985	25,532	75,781	84,670
DSU's issued for director compensation	39,334	10,767	100,477	10,767
Share-based compensation	68,426	19,790	168,925	37,771
<b>Total</b>	<b>\$ 289,092</b>	<b>\$ 151,308</b>	<b>\$ 772,091</b>	<b>\$ 397,622</b>

Key management personnel controlled approximately 2% of the issued common shares of the Company as at July 31, 2016 (October 31, 2015 – 2%).

Executive officers and directors participate in the Company's 2015 Incentive Plan, so they are eligible to receive stock options and deferred share units. Executive officers also participate in the Company's health benefits plan.

**SUMMARY OF QUARTERLY RESULTS**

Selected quarterly data with respect to the statement of loss and comprehensive loss is set out below:

Fiscal Year		1 <sup>st</sup> Quarter	2 <sup>nd</sup> Quarter	3 <sup>rd</sup> Quarter	4 <sup>th</sup> Quarter
2016	Net loss	\$ 676,450	\$ 691,917	\$ 964,947	
	Net loss per share	\$ 0.00	\$ 0.00	\$ 0.01	
2015	Net loss	\$ 630,294	\$ 676,212	\$ 666,855	\$ 886,116
	Net loss per share	\$ 0.00	\$ 0.01	\$ 0.00	\$ 0.01
2014	Net loss	\$ 594,105	\$ 747,935	\$ 725,839	\$ 678,180
	Net loss per share	\$ 0.00	\$ 0.01	\$ 0.01	\$ 0.01

It is important to note that historical patterns of expenditures cannot be taken as an indication of future expenditures. The amount and timing of expenditures, and therefore liquidity and capital resources, may vary substantially from period to period depending on the business and research activities being undertaken at any one time and the availability of funding from investors and prospective collaborative partners.

## **SERNOVA CORP.**

### **MANAGEMENT'S DISCUSSION AND ANALYSIS**

**FOR THE THREE AND NINE MONTHS ENDED JULY 31, 2016 AND 2015**

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#### **OFF-BALANCE SHEET ARRANGEMENTS**

We do not have any off-balance sheet arrangements.

#### **CRITICAL ACCOUNTING POLICIES AND ESTIMATES**

The preparation of financial statements in conformity with IFRS requires the Company to make judgements, estimates and assumptions that affect the application of accounting policies, the reported amounts of assets, liabilities and expenses, as well as the Company's ability to continue as a going concern. The estimates and assumptions made are continually evaluated and have been based on historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances. Such estimates and assumptions are inherently uncertain. Actual results could differ materially from these estimates and assumptions. Revisions to estimates are recognized in the period in which the estimate is revised and may impact future periods. A summary of the Company's significant accounting policies and estimates under IFRS is found in Note 3 of the Company's audited consolidated financial statements for the years ended October 31, 2015 and 2014.

Management has applied significant estimates and assumptions to the following:

##### **Valuation of share-based compensation**

The Company measures the cost of equity-settled transactions with employees by reference to the fair value of the equity instruments at the date at which they are granted. Estimating fair value for share-based payment transactions requires determining the most appropriate valuation model, which is dependent on the terms and conditions of the grant. This estimate also requires determining the most appropriate inputs to the valuation model including the expected: option life, volatility, risk-free interest rate, forfeiture rates, stock option exercise behaviours, dividend yield and corporate performance. Changes in these assumptions affect the fair value estimate for share-based compensation. The assumptions and models used for estimating fair value for share-based payment transactions are discussed in Note 8 of the audited consolidated financial statements for the years ended October 31, 2015 and 2014.

#### **INTERNAL CONTROLS OVER FINANCIAL REPORTING**

As a result of the Company's limited administrative staffing levels, internal controls which rely on segregation of duties, in many cases, are not possible. Due to resource constraints and the present stage of the Company's development, the Company does not have sufficient size and scale to warrant the hiring of additional staff to address this potential weakness at this time. To help mitigate the impact of this, the Company is highly reliant on the performance of compensating procedures and senior management's review and approval.

As a venture issuer, the Company is not required to certify the design and evaluation of the Company's disclosure controls and procedure ("DC&P") and internal controls over financial reporting ("ICFR"), and as such has not completed such an evaluation. Investors should be aware that inherent limitations on the ability of the certifying officers of a venture issuer to design and implement, on a cost effective basis, DC&P and ICFR as defined in NI 52-109, may result in additional risks to the quality, reliability, transparency and timeliness of interim and annual filings and other reports provided under securities legislation.

## **SERNOVA CORP.**

### **MANAGEMENT'S DISCUSSION AND ANALYSIS**

**FOR THE THREE AND NINE MONTHS ENDED JULY 31, 2016 AND 2015**

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## **CHANGES IN ACCOUNTING POLICIES**

### **New standards and interpretations not yet effective**

Standards issued, but not yet effective up to the date of issuance of the Company's consolidated financial statements are listed below. This listing is of standards and interpretations issued, which the Company reasonably expects may be applicable at a future date. The Company intends to adopt those standards when they become effective.

Certain pronouncements were issued by the IASB or International Financial Reporting Interpretation Committee that are mandatory for annual periods beginning after January 1, 2016 or later periods. Many of these updates are not applicable or are inconsequential to the Company and have been excluded from the discussion below. The remaining pronouncements are being assessed to determine their impact on the Company's results and financial position.

#### *IFRS 9 Financial Instruments*

In October 2010, the IASB published amendments to IFRS 9 *Financial Instruments* ("IFRS 9") which provides added guidance on the classification and measurement of financial liabilities. In July 2014, the IASB issued its final version of IFRS 9, which completes the classification and measurement, impairment and hedge accounting phases of the IASB's project to replace IAS 39 *Financial Instruments: Recognition and Measurement*. The final standard is mandatorily effective for annual periods beginning on or after January 1, 2018, with earlier application permitted. The Company is currently monitoring the developments of this standard and assessing the impact that the adoption of this standard may have on the consolidated financial statements.

#### *IFRS 15 Revenue from Contracts with Customers*

In May 2014, the IASB issued IFRS 15 *Revenue from Contracts with Customers* ("IFRS 15"), which covers principles for reporting about the nature, amount, timing and uncertainty of revenue and cash flows arising from contracts with customers. In September 2015, the IASB issued an amendment to IFRS 15 reflecting a one-year deferral of the effective date of the standard to January 1, 2018. The Company is currently monitoring the developments of this standard and assessing the impact that the adoption of this standard may have on the consolidated financial statements.

#### *IFRS 16 Leases*

In January 2016, the IASB issued IFRS 16 *Leases* ("IFRS 16"), its new lease standard that requires lessees to recognize assets and liabilities for most leases on the statement of financial position. Lessees applying IFRS 16 will have a single accounting model for all leases, with certain exemptions. Lessor accounting is substantially unchanged. The new standard will be effective from January 1, 2019 with limited early application permitted. The Company has not yet begun the process of evaluating the impact of this standard on the consolidated financial statements.

## **SERNOVA CORP.**

### **MANAGEMENT'S DISCUSSION AND ANALYSIS**

**FOR THE THREE AND NINE MONTHS ENDED JULY 31, 2016 AND 2015**

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#### **RISKS AND UNCERTAINTIES**

*An investment in our common shares involves a high degree of risk and should be considered speculative. An investment in our common shares should only be undertaken by those persons who can afford the total loss of their investment. You should carefully consider the risks and uncertainties described below, as well as other information contained in this MD&A. The risks and uncertainties below are not the only ones we face. Additional risks and uncertainties not presently known to us or that we believe to be immaterial may also adversely affect our business. If any of the following risks occur, our business, financial condition and results of operations could be seriously harmed and you could lose all or part of your investment. Further, if we fail to meet the expectations of the public market in any given period, the market price of our common shares could decline. We operate in a highly competitive environment that involves significant risks and uncertainties, some of which are outside of our control.*

The following is a summary list of risks and uncertainties for the Company. For a detailed description of each risk and uncertainty, please refer to the annual Management's Discussion and Analysis for the years ended October 31, 2015 and 2014 as filed on SEDAR.

#### **Investment Risk**

- *Volatility of share price, absence of dividends and fluctuation of operating results.*

#### **Issuer Risk**

- *Early stage development and scientific uncertainty.*
- *Additional financing requirements and access to capital.*
- *Dilution.*
- *Patents and proprietary technology.*
- *We depend heavily on the success of our Cell Pouch™ platform.*
- *We may expend our limited resources to pursue particular research and development opportunities and fail to capitalize on others that may be more profitable or for which there is a greater likelihood of success.*
- *Dependence on collaborative partners, licensors, contract manufacturer and others.*
- *Clinical trials are long, expensive and uncertain processes and Health Canada or the FDA may ultimately not approve any of our products. We may never develop any commercial applications or products that generate revenues.*
- *Reliance on key personnel.*
- *Employee misconduct or other improper activities.*
- *Lack of product revenues and history of losses.*
- *Conflict of interest.*

#### **Industry Risk**

- *Government regulations.*
- *Hazardous materials and environmental matters.*
- *Rapid technological change.*
- *Competition.*
- *Status of healthcare reimbursement.*
- *Potential product liability.*

**SERNOVA CORP.**

MANAGEMENT'S DISCUSSION AND ANALYSIS

FOR THE THREE AND NINE MONTHS ENDED JULY 31, 2016 AND 2015

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**DIRECTORS AND OFFICERS**

Frank Holler, Chairman of the Board of Directors

Jeffrey Bacha, Director

James Parsons, Director

Bruce Weber, Director

Dr. Philip Toleikis, President, Chief Executive Officer and Director

Scott Langille, Chief Financial Officer

**ADDITIONAL INFORMATION**

Additional information relating to the Company can be found on SEDAR at [www.sedar.com](http://www.sedar.com).