2014 Canadian Liver Foundation Research Operating Grant, Graduate Studentship and Summer Studentship Recipients

As Chairs of the Research Committee, we are happy to announce the 2014 Canadian Liver Foundation (CLF) Operating Grant, Graduate studentship and Summer Studentship Recipients. We would also like to thank all of the reviewers for their time and effort for their quality evaluations and selection of the recipients.

The CLF is the largest nonprofit funder of liver research in Canada and has invested more than $20 million in research since it was first founded. The Foundation offers funding in three grant categories: Operating grants for senior and new researchers; Graduate studentships for PhD and Masters level researchers; and Summer Studentships for undergraduate students. The funds to support these research grants have been provided through donations from individuals and corporations (non-pharmaceutical related) across Canada, which have been made directly to the CLF to support liver research in Canada. Each of these awards is highly competitive and all grant submissions undergo a rigorous review process by the Research Committee, comprised of established liver researchers from around the world, who rate the submissions based on scientific merit and relevance to the CLF's priorities. For further information regarding these grants and how the support of CLF is an important contribution to the development and advancement of research on liver diseases, please visit the Canadian Liver Foundation website at www.liver.ca

Christopher Rose PhD
CRCHUM, Université de Montréal, Quebec

Jordan Feld MD
University Health Network, Toronto, Ontario

ANNOUNCING THE 2014 RESEARCH OPERATING GRANT RECIPIENTS ($60,000/YEAR FOR 2 YEARS)

Dr Jennifer Estall, Institut de recherches cliniques de Montréal (IRCM), Montreal, Quebec
Project title: *Role of PGC-1alpha in NAFLD-associated liver cancer*
Nonalcoholic fatty liver disease (NAFLD) affects one-third of people in North America. Build-up of fat in the liver triggers inflammation and can cause permanent liver damage, increasing the risk of liver failure, diabetes, heart disease and liver cancer. It is known that diet and lifestyle, in combination with genetics, influence the development of liver cancer, but not much is known about how our genes are influenced by what we eat and whether this affects our cancer risk. Dr Estall's team has established that low levels of a protein called PGC-1 alpha make fatty liver disease worse. Dr Estall will research whether the newly discovered protective property of this protein also influences liver cancer risk associated with poor diet and obesity. This may lead to new ways to prevent liver cancer.

Dr Denis Grant, University of Toronto, Toronto, Ontario
Project title: *Effect of arylamine N-acetyltransferase deficiency on hepatitis B virus-induced liver cancer*
One of the most important risk factors for liver cancer is chronic hepatitis B. This chronic liver disease produces damage and inflammation of the liver, which in turn provides an environment that allows damaged cells to grow out of control and eventually form liver cancer. Dr. Grant's research team has recently discovered that the removal from mice of one particular enzyme that can turn chemicals into cancer-causing agents protected them against getting liver cancer when they were exposed to a particular chemical found in cigarette smoke and some dyes. However, this protective effect was not related to the usual role of this enzyme in producing toxic by-products. Dr. Grant's research will determine whether the elimination of this enzyme can prevent the development of liver cancer caused by the hepatitis B virus. If this is the case, Dr. Grant's research can lead to the development of new treatments for liver cancer.

ANNOUNCING THE 2014 GRADUATE STUDENTSHIP RECIPIENTS ($20,000/YEAR FOR 2 YEARS)

Zhen Lin
Supervisor: Dr Andrew Mason, University of Alberta, Edmonton, Alberta
Project title: *Do microRNAs work in concert to modulate expression of the VEGF-A oncogene in hepatocellular carcinoma?*
The WHO estimates that liver cancer is the second leading cause of cancer-related deaths worldwide. Many patients cannot be treated with current available treatments and many do not qualify for liver transplantation. Therefore, other avenues for treating liver cancer are required. Dr Mason's laboratory has focused on identifying small regulatory molecules known as microRNAs that have been implicated in liver cancer. Their research found that the specific group of microRNAs might act together to prevent the onset of cancer by regulating a protein known as VEGF-A that promotes liver cancer growth. The research will focus on investigating whether enhancing the level of these microRNAs can inhibit the production of VEGF-A protein and as a result limit the development of liver cancer.

ANNOUNCING THE 2014 SUMMER STUDENTSHIP RECIPIENTS ($4,000/YEAR FOR 3 MONTHS)

Jennifer Liang
Supervisors: Drs Orlee Guttman and Richard Schreiber, University of British Columbia, Vancouver, British Columbia
Project title: *Neonatal cholestasis in British Columbia: A quality of care study*
Many babies have newborn jaundice (a yellowing of the whites of the eyes) lasting three to five days after birth because the liver is not fully

developed. This type of jaundice usually clears by itself and is not a sign of liver disease. However, a small portion of newborns who have jaundice (about one in 2500 births) have cholestasis (a condition in which bile cannot be drained from the liver). This can be a sign of serious liver disease that needs to be addressed as early as possible. In 2009, British Columbia introduced a policy that requires provincial laboratories to test bilirubin levels in jaundiced infants in order to identify those with liver disease. The goals of this research are to evaluate the laboratory compliance with this policy, to determine how many infants develop cholestasis and to assess the outcomes of these patients.

Gregory Heymann
Supervisor: Dr Jordan Feld, University of Toronto, Toronto, Ontario
Project title: *Point-of-care nanodiagnostic to determine hepatitis C exposure and active infection by the naked eye*
It is estimated that 250,000 Canadians have hepatitis C and many are unaware of their infection. This is because the hepatitis C virus slowly destroys the liver, with few or no symptoms, until the disease progresses to cirrhosis (scarring of the liver) or liver cancer. Hepatitis C is the number one reason for liver transplants in Canada. Diagnosing hepatitis C is complex, requiring one test to confirm exposure to the virus, and a second to confirm the virus is still present in the blood. At this point, the genotype of the virus is also determined, which is essential to guide curative treatments. These tests are expensive and require trained personnel and sophisticated equipment. Dr Feld is developing two novel approaches which will detect exposure to the virus, active infection, the viral genotype and the best course of treatment. These point-of-care tests have the potential to revolutionize the screening of hepatitis in community clinics and rural areas of the country, making elimination of this liver disease possible.

Rutu Panjabi
Supervisor: Dr Gregory Steinberg
McMaster University, Hamilton, Ontario
Project title: *Unravelling the connections between obesity, NAFLD and metformin for the treatment of hepatocellular carcinoma*
Liver cancer is one of the few types of cancer that affect more people today than it did 40 years ago. Patients are often diagnosed in the advanced stages of the disease with poor prognosis, with 5-year survival rates of only 20%. Metformin is the most widely prescribed diabetes medication worldwide and there is evidence that it can reduce the risk of liver cancer development in patients with diabetes. This research project will shed light on how metformin is able to reduce the risk of developing liver cancer and help physicians treat patients who are at risk for developing this deadly disease.

Bridget Anne Pierce
Supervisor: Dr Kevork Peltekian, Dalhousie University, Halifax, Nova Scotia
Project title: *Long-term follow-up care of transplantation patients: exploring the comfort level of primary care providers in caring for patients post organ transplant*
Every year, about 140 organ transplants (including liver, kidney, heart and pancreas) are performed at the Multi-Organ Transplant Program in Halifax which serves patients living in Atlantic Canada. Many of the transplant patients come from rural communities and their follow-up care is shared between the transplant team and the primary care physician. Until now, there has been no research looking at the comfort levels of primary care physicians in providing post-transplantation care. This research project aims to uncover how comfortable physicians are in providing post-liver transplantation care through the use of an online questionnaire survey. The findings of this study may be used to identify areas of improvement for managing the care of post-transplant patients.