Mount Sinai Hospital
Sinai Health System
Joseph & Wolf Lebovic Health Complex
ZANE COHEN CENTRE FOR DIGESTIVE DISEASES

NETWORK

Fall 2020

Director's Message

I'm very pleased and proud to present to you the Fall 2020 edition of our NETWORK newsletter.
I hope that you will take the time to read it. Once again, the content demonstrates the vast amount of services, clinical research, and educational work ongoing in our research centre, both in the areas of Inflammatory Bowel Diseases and Hereditary Cancer. Highlights are presented, but this by no means completely covers the impact that our research centre makes in these areas. I would like to thank all of our multidisciplinary staff, including our principle investigators, research assistants, students, and international fellow, the latter of whom add tremendous additional productivity to the research that's being accomplished. Also, we would be lost without the help of our IT support staff. Their daily impact is felt by everyone.

At the time of printing, September 2020, we are in the midst of the COVID-19 outbreak. Please be assured that we're taking maximum precautions with all our workers. For the most part, we will be working virtually but are still active and responding to the needs of our patients and staff. We have resumed 25% activity capacity for the centre as of September, 2020.

We hope that you will enjoy reading this NETWORK newsletter and look forward to your comments.

Zane Cohen, Director - Zane Cohen Centre

Order of Ontario Recipient

Congratulations to Dr. Zane Cohen for his appointment to the Order of Ontario, the most prestigious official honour in Ontario. With a medical career spanning more than four decades, Zane is known as an internationally renowned surgeon and the head of colon and rectal surgery. Zane introduced innovative, function preserving surgical procedures in colorectal surgery that have improved the lives of hundreds of patients. He initiated a subspecialty, fellowship training program that has produced 86 graduates, populating many centres across Canada and the world.He has been vocally pro-general neutrality in his recruitment and this is now reflected in the striking increase in female general surgeons in the University of Toronto general surgery faculty and their graduates and trainees. Zane has received many honors nationally and internationally including two lifetime achievement awards for clinical education and research related to IBD – one each from the Gastroenterology Division of University of Toronto and from the Crohn's Colitis Canada.

Canada Research Chair in IBD

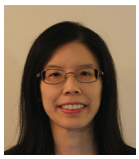
This year, Dr. Ken Croitoru was awarded a Canada Research Chair in Inflammatory Bowel Disease. The Canada Research Chair is a prominent federal distinction that recognizes and supports world-class scientists who are driving forward new discoveries. The core of Dr. Croitoru's program is the Genetic, Environmental, Microbial (GEM) Project – the world's largest prospective study that aims to better understand the origins and define predictive indicators of IBD. This is exciting news for the Crohn's and Colitis community. As the number of Canadians expected to live with one of these diseases continues to grow, research in this field becomes increasingly pressing. We always welcome questions and queries about our work. For more information on the GEM project, please see inside or visit gemproject.ca.

Congratulations Zane and Ken!
Salah Metwaly
Co-Director - Zane Cohen Centre

Clinical Research

Preconception and Pregnancy in IBD

Dr. Vivian Huang
Gastroenterologist



The Preconception and Pregnancy in Inflammatory bowel disease (IBD) clinical research program has been busy this year with more than 20 preconception and 60 pregnant women with IBD coming through the clinic, many of whom are seen in our new Joint OB/IBD clinic, benefiting from personalized education and counseling, close monitoring of their IBD, referrals to medical and surgical consultants as needed and telemedicine visits. Dr. Vivian Huang and her research team developed an online program for monitoring IBD from the comfort of one's own home and are piloting it in the Optimizing Maternal and Neonatal outcomes in IBD (OMNI) study. Recruitment began in November 2019, twenty pregnant IBD patients who monitor their symptoms and markers of gut inflammation remotely are receiving positive feedback that it is making it easier for them to feel that their IBD is managed effectively. To address patient and clinician concerns about IBD and pregnancy, the research team, in collaboration with national and international colleagues, has developed a web-based decision aid (Pregnancy in IBD Decision Aid (PIDA)) which is currently in the alpha pilot testing phase with patients and clinicians worldwide providing feedback.

Tips for increasing likelihood of a healthy pregnancy while having IBD

1. Women with IBD can become pregnant and have healthy children.
2. Discuss your family plans and wishes with your gastroenterologist and your care circle.
3. Ideally be in remission for at least 3 months before trying to become pregnant.
4. Stay on your maintenance IBD meds as prescribed by your gastroenterologist during pregnancy.
5. Do not stop your IBD medications on your own - speak with your gastroenterologist about your IBD medications and pregnancy.
6. Regular moderate exercise can help to keep you healthy and is important in pregnancy. Gentle exercises, such as walking, yoga and swimming, can be especially valuable. That said, it is also important not to overdo it, especially if you already suffer from IBD-related tiredness and fatigue.
7. Having IBD, the increased nutritional needs of pregnancy may mean you need to supplement your diet, especially if you are underweight or have active disease. You may find it helpful to talk to a dietitian or your IBD team about this.

New Medications in UC and CD

Dr. Hillary Steinhart
Gastroenterologist

This past year Dr. Steinhart and his team participated in several international clinical trials investigating new medications in Ulcerative Colitis (UC) and Crohn's Disease (CD). Two trials were for Therapeutic Drug Monitoring (TDM) in CD (now close to recruitment) and other interventional trials in CD and UC aim to evaluate effectiveness of investigational therapeutic products such as microbiome-based therapeutics, biologics, and dietary approaches. We are the leading center in Canada for one of the TDM studies in CD. Patient information sessions are now available for patients interested in gaining more information about clinical trials in IBD at MSH. Please refer to https://www.zanecohencentre.com/ibd/research for the list of actively recruiting clinical trials. For information about patient information sessions or questions related to actively recruiting clinical trials please contact Shelley Mikolainis at (416) 586-4800 ex. 4989 or email Shelley.Mikolainis@sinaihealth.ca or Shlomit Boguslavsky, at (416) 586-4800 ex.8351 or email Shlomit.Boguslavsky@sinaihealth.ca.

Promoting Access and Care

Dr. Geoffrey Nguyen
PACE Program Director

The PACE IBD Telemedicine Program was developed in collaboration with Crohn's and Colitis Canada to improve access to and quality of care for IBD patients, specifically for patients living in Ontario's remote and underserviced areas. Launched in June 2016 by Dr. Geoffrey Nguyen at Mount Sinai Hospital, the program includes eight gastroenterologists specializing in IBD care, three colorectal surgeons, two registered nurses, a dietitian and administrative support. Since inception, over 350 patients have been served, more than 80 telemedicine studios have been added to the network, and over 900 visits have been completed. Additionally, 10 nursing students have completed placements to train them in telemedicine. As evaluation is a key component of the PACE program, a prospective cohort study was being carried out concurrently to compare care received via telemedicine videoconference to in-person clinic care. Initial analysis showed significant cost savings and reduction in wait times. These findings have been published in scientific journals. For more information, visit our website: zanecohencentre.com/pace. The Eliciting Patient Preference for Prioritization of Healthcare Processes in the Management of Inflammatory Bowel Disease study is being carried out at several PACE sites in collaboration with Crohn's and Colitis Canada. This project, being led by Dr. Nguyen, seeks to assess patient preferences in prioritizing healthcare processes in the management of their IBD, and contrast that with the preferences of IBD specialists. The first phase of this study, with several focus groups composed of IBD patients had explored their preferences and experiences, was completed. The data developed a patient preferences survey which will be rolling out across Canada in 2020. Doctors and patients often have differing opinions on the most important goals of treatment, and the patient perspective is not always well represented in planning healthcare delivery. This study is intended to help policy makers prioritize IBD-related health initiatives that patients feel are most important, and to improve patient physician communication.

Shelley Bouchard, Dr. Geoffrey Nguyuen, Peter Habashi

Familial GI Registry (FGICR)

Updates in Genetic Testing Available for Polyposis

Kara Semotiuk
Genetic Counsellor

Advances in genetic technology and knowledge of new genes leads to broader genetic testing options. Genetic labs are frequently adding genes to their testing menus. Therefore, current testing offered for someone with multiple polyps or someone suspicious of having a hereditary cancer syndrome is more extensive and efficient compared to testing offered in the past. We are beginning to understand the clinical presentation of new syndromes that cause multiple polyps ("polyposis"), and to offer genetic testing for these conditions. For example, within the past couple of years, genetic testing for two relatively new genes called *MSH3* and *NTHL1* has become available for individuals with multiple adenomatous polyps. Although we try our best to stay on top of the latest genetic tests available to our patients, we are unable to go back to each individual or family every time a new genetic test is introduced. Therefore, we rely on you to touch base with us periodically to see if you or your relatives might be eligible for further genetic testing. Genetic testing can not only help determine the underlying cause of someone's polyps or cancer, but can also help guide screening and prevention for those with polyps and their family members, and aid in decisions about treatment. If you have updates about your family history, or a strong family history of colorectal, endometrial or other gastrointestinal or genitourinary cancers, or multiple polyps, and your prior genetic testing was inconclusive (negative), please contact your genetic counsellor. We would be happy to review your case to see if updated testing is indicated. Please keep in mind that genetic testing covered by OHIP is generally offered to people affected with multiple polyps or cancer themselves.

Ontario Familial Colorectal Cancer Registry

Dr. Steven Gallinger
Principal Investigator

We are pleased to announce that the OFCCR has received further funding from the US National Institutes of Health (NIH) as part of the Colon Cancer Family Registry. This funding award allows us to continue the study until 2023. The Colon Cancer Family Registry (CCFR) is an international consortium of research institutes in the United States, Canada and Australasia. Formed in 1997, the CCFR is the largest resource in the world of health-related information and specimens to support studies on the causes, prevention and management of colorectal cancer. Over 9,000 people from 5,200 families are participating in the OFCCR. They have completed questionnaires and many have kindly provided a blood and/or tumour sample that have contributed to more than 300 different research projects. These studies are finding the best ways to prevent colorectal cancer, and how to identify which people are at the highest and lowest risk of the disease. For further information on the CCFR research, please refer to our website at coloncfr.org/.

Polyposis Adolescents to Adult Centers

Dr. Carol Durno
Paedatric Gastroenterolgist

The prevention of disengagement and loss to follow-up in young adults with polyposis is important in order to prevent serious complications such as colorectal cancer. Families and medical professionals saw a need to focus on the process of transition in order to improve patient's experiences. Dr. Carol Durno was part of a team of international experts from multiple disciplines including pediatric and adult gastroenterology, surgery, psychology and social work who prepared a document supported by The American College of Gastroenterology with recommendations to improve transition of care for adolescents with hereditary polyposis syndromes. The main recommendation was for pediatric patients with a polyposis syndrome to be managed by providers with experience in the syndrome and in liaison with or optimally within a Hereditary Colon Cancer Registry multi-disciplinary team. Strategies to improve the transition later starts with involving children from a young age with education around the polyposis condition and age appropriate decision making in the addition to the psychological support. Genetic counsellors play a key role in educating families about their specific condition.

Research Updates

- **Serrated Polyposis study**: working with Dr. Daniel Buchanan in Australia to study associated genes with serrated polyposis
- **Urinary tract cancers in Lynch syndrome**: in collaboration with Dr. Alex Zlotta, uro-oncologist at Mount Sinai, a study is being done to compare staging and treatment response of urinary tract cancers (kidney, bladder, ureter, prostate) that present in Lynch syndrome with those that present in non-Lynch syndrome patient
- **Barriers and Facilitators to stomach surgery in individuals with CDH1 mutations**: study looking at these issues of considering preventative stomach surgery in individuals with hereditary gastric cancer syndrome
- **Hereditary gastric cancer in Ontario**: study looking at age of presentation, family history and associated hereditary syndromes in all the gastric cancer patients who presented to the Zane Cohen Centre
- **Tumour circulating DNA:** working with Dr. Raymond Kim, geneticist, we are inviting all individuals with Lynch syndrome to donate blood samples to study if there is DNA from cancer that can be identified through a blood test
- **Knowledge of gynecological cancer and prevention tools in Lynch syndrome:** Dr. Tae Hart will soon begin a study exploring needs of Lynch syndrome patients in terms of understanding risk and prevention of gynecological cancers
- **FAP study:** Dr. Jacob Vortsman at the Hospital for Sick Children, is inviting children and young adults with FAP to complete questionnaires about behavior and learning
- **Colonoscopy screening in Lynch syndrome**: in collaboration with Dr. Laurent Broillais, epidemiologist at Samuel Lunenfeld Research Institute, we are looking at frequency and effectiveness of screening to prevent colorectal polyp and cancer development in individuals with Lynch syndrome
- **Exome sequencing:** working with Dr. Yvonne Bombard, epidemiologist at St. Michael's Hospital, we are offering exome sequencing to individuals who test negative for hereditary cancer syndromes to assess what type of genetic results individuals are interested in from exome sequencing
- **Immunohistochemistry testing**: study to look at the presence of Lynch syndrome features in different types of cancers, and to see how concordant this testing is with hereditary gene mutations

Familial GI Registry (FGICR) cont'd

Lynch Syndrome Updates - Somatic Testing

Thomas Ward
Genetic Counsellor

Lynch syndrome (LS) is an inherited condition that increases a person's risk to develop colorectal, endometrial, and other cancers. This condition is caused by a mutation, or harmful gene change, in one of five genes: *MLH1, MSH2, MSH6, PMS2,* and *EPCAM*. These genes instruct our cells on how make proteins that help to fix routine DNA damage, thereby protecting us against cancer. We have two copies of each of the five LS genes because we inherit one copy from each of our biological parents. Individuals with LS have a mutation in one of these genes, meaning they have only one working copy of that gene. Therefore they have an increased risk to develop certain types of cancer, mainly colorectal and endometrial (uterine), compared to someone who has two working copies of these cancer protection genes (see figure 1) A screening test known as Immunohistochemistry (IHC) looks for features of LS in a tumour. In particular, it looks at the proteins made by four of the genes listed above (*MLH1, MSH2, MSH6*, and *PMS2*) to see if they are present in the tumour. Approximately 15% of colorectal cancers and 20% of endometrial cancers will exhibit these features. However most of these tumours are due to sporadic causes (chance), rather than being caused by LS (hereditary). If they are not present, this could either be due to LS or random chance (the gene stops working as the tumour develops). When features of Lynch syndrome are detected, follow-up testing is recommended to help determine if a tumour is due to LS or to a sporadic cause. This may include additional tumour testing or genetic testing on a blood sample to look for mutations in the LS genes, which you are born with. In the past, if these additional tests did not provide an explanation for why a tumour showed features of LS, there were no other tests available to us. A new genetic test known as paired germline and tumour testing is now available to help us try to determine further why a tumour has features of LS. This test compares DNA from a tumour and DNA from a blood sample. If mutations are detected in DNA from the tumour and not in DNA from the blood sample, it suggests that the mutations developed in the cancer cells (called somatic mutations) and are not present in normal cells throughout the rest of the body, and therefore are not hereditary. This result indicates that the person is unlikely to have LS. While we do not always find an answer in these cases, this technology has helped us to determine whether some families have LS or not. If your initial genetics evaluation was unable to determine if your tumour was caused by LS, please contact your genetic counsellor to ask if this new genetic testing technology would be beneficial for you.

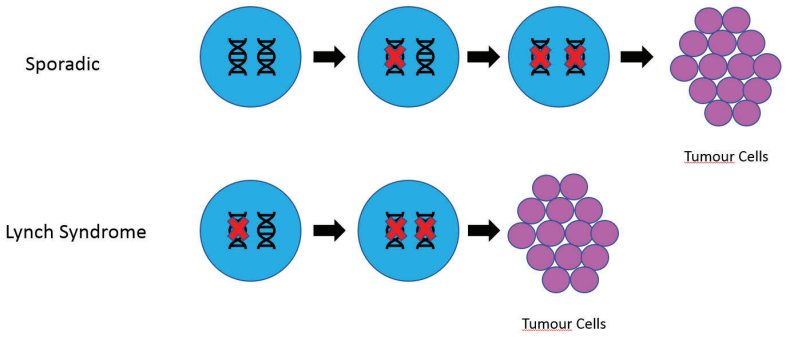


Figure 1

Do individuals with Lynch syndrome need to have their partner tested as well?

Melyssa Aronson
Genetic Counsellor

This is a common question we hear from individuals who are found to have Lynch syndrome (LS), because they wonder what the risk would be to their children if there was Lynch syndrome coming from both sides of the family. This is actually a complex question because LS can be caused by one of 5 different genes (*MLH1, MSH2, MSH6, PMS2* and *EPCAM*). There is a risk for a childhood cancer condition, called Constitutional Mismatch Repair Deficiency Syndrome or CMMRD, if a child inherits LS from both sides of the family, but it would have to be the SAME gene impacted, for example a *PMS2* mutation from both Mom and Dad. The same risk does not occur if Mom has an *MLH1* mutation and Dad has a *PMS2* mutation. CMMRD is exceedingly rare.

To answer the question of whether a partner should be tested, we look at a few different things:

1) Age of the children: We ask if the couple has young kids, or is planning to have children in the future? Since CMMRD almost always causes cancer at a young age, **if the children were unaffected up to age 18, then it is unlikely they have CMMRD and we would not need to test both parents.**

2) Common ancestors: We ask if the couple could be related to each other, such as distant cousins or come from a geographical location where many in the population share a common ancestor. Since LS is rare, it is unlikely two unrelated people would have the same genetic condition, but that risk increases if a couples shares a common ancestor. **So, if a couple is related to each other (i.e. cousins), then we would consider testing a partner/spouse.**

3) Gene impacted and family history: If the individual has an *MLH1, MSH2* or *EPCAM* mutation, then we could test if their partner/spouse has a strong family history of cancer. These 3 genes in particular, usually cause multiple relatives to be affected with colorectal and endometrial cancer at young ages. So, if the partner/spouse does not have a family history of cancer, we would have a low suspicion of LS and not offer them testing. The same is not true for ruling out *PMS2* or *MSH6*, because the associated cancer risk is relatively low, and these gene mutations can be run silently through a family. These gene mutations may also be a little more common than the other 3, so **we do offer testing for partners/spouses of someone with a *PMS2* or *MSH6* mutation, if they have young children or are planning children in the future.**

4) There may be other circumstances where we investigate CMMRD, for example if a child has features of a different condition called neurofibromatosis. We always recommend speaking to your genetic counsellor if you have questions.

Take away message:
We would test the partner of someone with Lynch syndrome if they have young children (or planning children) AND:
- the couple share a common ancestor or
- LS is caused by *PMS2* or *MSH6* mutation (regardless of family history in partner) or
- the partner has a strong family history of colorectal, endometrial or other Lynch syndrome cancers.

Surgical Research

IBD Surgery Group

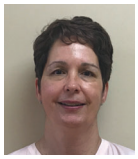
Drs. Anthony De Buck & Mantaj Brar
General Surgeons

Dr. Anthony de Buck van Overstraeten and Dr. Mantaj Brar have recently received funding from the International Organization For the Study of Inflammatory Bowel Disease (IOIBD) to support the FUNCTIon Trial – the first randomized controlled trial of Transanal ileal pouch anal anastomosis. Ileal pouch anal anastomosis remains the surgery of choice for patients with medically refractory ulcerative colitis, and the surgeons at Mount Sinai Hospital have been innovative leaders in the field of pouch surgery for over 30 years. Transanal surgery uses minimally invasive surgical instruments inserted through a port placed into the anus, allowing the surgeon to dissect the rectum and thereby avoiding an open incision, which is often necessary for a laparoscopic pouch surgery. Transanal surgery has been associated with less pain and quicker recovery for patients requiring ileal pouch anal anastomosis. This international multicentre trial, led by our group at the ZCC, is a collaborative effort with the Cleveland Clinic, Cedars Sinai LA, and St. Mark's Hospital UK. This trial will evaluate whether the observed short-term benefits of this innovative surgery is associated with favourable long-term functional outcomes for patients with medical refractory ulcerative colitis. Findings from the study will validate whether or not this minimally invasive procedure should be the standard of care in the future. The IBD surgery group is also participating in the multicentre SPARES trial which is evaluating whether extended resection of the mesentery at the time of surgery for Crohn's disease leads to less recurrence following surgery. Preliminary evidence suggests that extensive mesenteric resection may dramatically decrease the risk of recurrence, but no robust trials have been performed to date.

Division of General Surgery

IBD Support Network

Brenda O'Connor
IBD Research Nurse



Treatment of IBD involves more than diagnosis, prescribing medication or undergoing surgery. When confronted with illness, patients seek professional help and advice from their physician, nurse, social worker and also rely on support from family members, peers and fellow patients. Our support groups are an excellent opportunity for patients and family members and friends to gain information on all aspects of their IBD journey but also provide a safe forum to meet and share on living well with the diseases and receive peer support. Please refer to the News section to find upcoming dates and contact. For information about the support groups and speakers, please access zanecohencentre.com/ibd/ibd-support-network. If you have any questions, please contact Brenda O'Connor at 416-586-4800 x8349 or email brenda.o'connor@sinaihealth.ca. If you are unable to physically attend, please email Brenda directly for joining via our Ontario Telemedicine Network (OTN) connection.

Tips for IBD Caregivers

1. Figure out what things or activities are nourishing for you and make time to do it Anxiety and depression are common among patients with IBD, as well as caregivers.
2. Find someone to talk about it if you are experiencing these symptoms, or encourage your loved one to talk about it too – normalize it with them and find common ground.
3. It's easy to become isolated with IBD, for both patients and caregivers. Try to support yourself with people who care for you and will support you.
4. It's important to be informed as a patient and a caregiver and seek out information. Make sure you consider what you need and when you need it, especially when thinking about attending support groups or education sessions.
5. As a caregiver, the best thing you can do for your loved one is to just listen and acknowledge how difficult it is to have IBD.

Soft Tissue Sarcoma Group

Dr. Anand Govindarajan
General Surgeon

The Peritoneal Surface Malignancy Program at Mount Sinai Hospital has completed over 300 operations for peritoneal malignancy (cancer that has spread to the abdominal lining). These complex surgeries offer the only potential for cure in this advanced form of cancer, and in Ontario, are only performed at Mount Sinai Hospital. We have several ongoing studies to assess and improve outcomes in these patients. We are analyzing the results of a completed study that looked at comparing novel imaging methods for peritoneal malignancy against CT scans. We are concluding a randomized trial we are conducted looking at the role of "prehabilitation" (prehab) in the care of complex cancer surgery patients. Prehab is a novel and innovative approach to treat patients preoperatively to improve their outcomes postoperatively. Our approach uses both physical conditioning and stress-reduction techniques. We are also continuing to look at the quality of care and quality of life in cancer surgery patients. One area that we are looking into is the impact of the provider and institutional culture on a patient's length of stay after colorectal cancer surgery.

The Sarcoma Program in Toronto is the largest multi-disciplinary program of its type in Canada. It is unique because patients receive all of their cancer care needs along with their complementary medical, rehabilitation and psycho-social needs being met. Our goal is to offer high quality multidisciplinary treatment to patients with musculoskeletal tumors. This includes patients with soft tissue and bone sarcoma, benign aggressive bone and soft tissue tumors, difficult reconstructive problems related to metastatic disease, along with other tumor-related problems. Toronto Sarcoma has recently launched a web resource aimed at physicians and patients/caregivers with the emphasis on centralizing information which is otherwise spread out across all of our associated hospitals (Mount Sinai, UHN and Sick Kids). We aim to continue to expand this resource with the help of our physicians, colleagues and patients in the upcoming years to ensure that it remains a relevant source of information for all. Please visit our website for more information: torontosarcoma.com

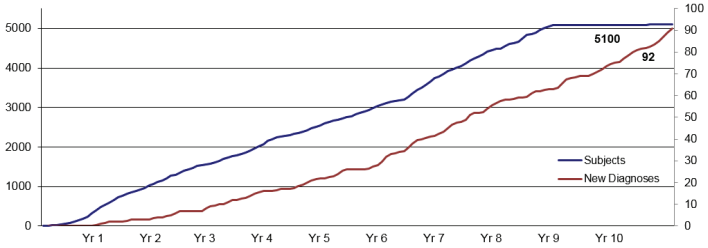
TORONTO SARCOMA

Research Programs

The GEM Project

Dr. Ken Croitoru
GEM Program Director

Dr. Ken Croitoru continues to lead the Crohn's Colitis Canada GEM (Genetics, Environmental and Microbial) Project coordinated in the Zane Cohen Center at Mount Sinai Hospital in Toronto. The project has completed its ambitious goal of recruiting over 5000 individuals at risk of developing Crohn's Disease (CD), 92 of which have developed CD since their enrollment. The goal was to define the biomarkers that predict those who develop disease and use this information to understand what causes Crohn's disease and investigate prevention. We have amassed data on the genetics of these subjects, defined the types of bacteria that live in their gut (microbiome) and measured physiological markers of gut leakiness and pre-disease gut inflammation with new data on serum protein and anti-bacterial antibodies. This helps develop a prediction model allowing us to identify healthy individuals with the highest risk of developing disease. Over the last year the study re-opened recruitment to healthy participants with two or more first degree relatives with CD. Additionally, the study is collecting bi-annual samples from interested participants to capture any changes that occur over time. These are exciting times for the project as it marks the approaching (12-year) maturation of the project and delivery of information not attainable through any other study design. It is through these efforts that we hope to develop strategies for prevention and improved treatments of IBD, if not a possible cure. The GEM Project has received over $20 million in funding from Crohn's and Colitis Canada and the Helmsley Charitable Trust to support this ground-breaking work. The research team continues to grow with the addition of Juan Antonio Raygoza and Sun-Ho Lee as postdoctoral fellows and Williams Turpin as a Research Associate. Research Program Manager Michelle Smith continues to drive the data generation and analysis team. The IBD Research Lab led by Namita Power has been joined by Dovic King and Maggie Kwan. Heather MacAulay has taken over as Project Manager while Ashleigh Goethel is on maternity leave (congratulations!), and leads a team of GEM research coordinators including Stephanie Gosselin, Yurie Yamagishi, Clarissa Ratjen, and Kirtana Sivanantharajah.



GEM Subject Recruitment and New Diagnosis

IBD Biomarkers Program

Dr. Mark Silverberg
Gastroenterologist

Dr. Mark Silverberg's IBD Biomarkers research program is in its 18th year. He has a team of project managers, research assistants and coordinators, lab technicians, scientific associates and trainees. The goals of our research program are to identify susceptibility genes and biomarkers for Inflammatory Bowel Disease (IBD), which include Crohn's disease (CD) and Ulcerative colitis (UC), and to explain the contribution of these markers to the cause and clinical course of IBD. We use a number of high-throughput methodologies such as genome- wide association studies (studying DNA and genes), whole-genome expression (studying which genes are on or off), microRNAs (small molecules that can regulate gene expression) and microbiome (gut bacteria) analysis. We also investigate serum levels of novel antibodies, biologic drug levels and their corresponding antibodies and correlate these with disease activity and how this information can be applied to clinical management. Several new lab members have joined the team including our postdoctoral fellow Dr. Shadi Nayeri who completed her PhD in genomics and bioinformatics at the University of Alberta. Dr. Cristian Hernandez, an IBD Advanced Fellow, received the Gordon R. Greenberg Fellowship Award as well as a competitive CIHR/CAG Fellowship award for his work on the interplay of diet, bile acids and the microbiome on IBD. We are coordinating a large team to present our data at Digestive Disease Week (May 2020). We are recruiting for recently launched studies including a dietary intervention study for active UC patients, a prospective pouch study following patients from the time of their surgery, an UC relapse study following UC patients to see if we can further understand why some patients flare. This past year, Dr. Silverberg and his team participated in two international, blinded, placebo-controlled clinical trials investigating a new medication for CD. One trial was for small bowel CD (now closed to recruitment) and the other is for perianal CD and is almost closed to recruitment. We are one of the leading centres for both trials. This research program has been funded mainly by grants from the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK/NIH), Crohn's and Colitis Canada (CCC) and Canadian Institutes of Health Research (CIHR), the International Organization for the Study of Inflammatory Bowel Disease (IOIBD) as well as generous donations. For more information on the Silverberg Lab, please visit our lab website at: research.lunenfeld.ca/silverberg. We are recruiting subjects for various research studies. A full listing of all clinical-translational and clinical trial research projects can be found at: zanecohencentre.com/ibd/research

Facts about the IBD Biomarker Program

- Did you know poop may hold the key to understanding IBD? We need your poop! Contact us: 416-586-4800 x2318
- To date, we have collected: > 8500 research blood samples among > 5200 research subjects, and trained > 20 Fellows
- We're International! Our Fellows come from Ireland, England, Australia, Chile, Korea, Israel, The Netherlands, Canada
- Dr. Silverberg is an author on > 185 publications. This past year, we've submitted >20 abstracts.

CIHR Randomized Controlled Trials

Dr. Erin Kennedy
General Surgeon

Recently, Dr. Erin Kennedy convened with a Patient Advisory Committee to co-develop and implement an integrated discharge monitoring system using an interactive mobile app for colorectal surgery patients. She is currently conducting a CIHR funded randomized controlled trial (RCT) to evaluate the effectiveness of this app to support patients following hospital discharge.

Dr. Kennedy is also leading a pan-Canadian clinical trial supported by CIHR to evaluate the safety and effectiveness of non-operative management for patients who have locally advanced low rectal cancer. She is also launching a new CIHR funded multi-site RCT to determine the most effective bowel preparation method to reduce surgical site infections in patients undergoing colon surgery.

Panel Testing in Pancreatic Adenocarcinoma

Dr. Steve Gallinger
Hepatobiliary Surgeon

Approximately 5-10% of common cancers are related to a hereditary cause. Genetic testing for families with strong histories with breast, ovarian, and colorectal cancer has been available in Ontario since the 1990s. Hereditary causes of pancreatic cancer are identified in 5-10% of patients; however, coverage for genetic testing for this population in lagging. New technologies have made genetic testing less expensive with accessibility becoming more widespread. Several professional societies and institutions, especially in the United States, have recommended germline genetic testing for all pancreatic cancer patients. Currently, there is no discretely Canadian recommendation for genetic testing in pancreatic cancer. Genetic testing for all pancreatic cancer patients is currently available through a sponsored testing program offered by a commercial lab in the USA. We have been offering this sponsored testing to all patients with pancreatic ductal adenocarcinoma referred. One hundred twenty-nine patients have undergone germline genetic testing over the last four months. Pathogenic variants (mutations) in genes associated with pancreatic cancer development have been identified in nine (7%) patients. The overall pathogenic variant detection rate was 16/129 (12%). Current genetic testing guidelines in Ontario suggest that a threshold of 10% should be met for testing to be offered. Our results show that testing unselected pancreatic cancer patients meets that threshold and suggest that an endorsement of germline genetic testing for all Canadian pancreatic cancer patients be adopted.

2019 Lynch Syndrome Education Night

Melyssa Aronson
Genetic Counsellor

Our 8th biennial education night for Lynch syndrome was held on Sep 25, 2019 with almost 200 people in attendance. We invited 3 medical experts and a patient speaker to share her incredible story. This year, our talks focused on hot topics that are frequently asked about including; cancer risk and screening, carrier testing and reproductive technology, the evolving knowledge around chemotherapy and immunotherapy in the treatment of cancers in Lynch syndrome, working with primary care providers about hereditary conditions. The highlight was Roslyn Fitzpatrick, a self-described "Lynchie", shared her story on advocacy. She then paid homage to Dr. Henry Lynch, who she had known well, and had the great fortune to meet before his death. All slides have been posted at the zanecohencentre.com/event/lynch. Keep an eye out for our next event, the Familial Polyposis education evening. Originally scheduled for fall 2021, this event has been postponed due to COVID-19.

Announcements

Dr. Erin Kennedy, a colorectal surgeon was appointed to Head of the Division of General Surgery at Mount Sinai Hospital. She is a Professor at the University of Toronto. Dr. Kennedy has successfully developed a collaborative network both locally, provincially and nationally and led several multidisciplinary initiatives, including the development and implementation of a synoptic MRI report for rectal cancer across Ontario.

Dr. Adam Weizman was appointed as the Medical Directory of the IBD program at Mount Sinai Hospital. He is a Clinician in Quality and Innovation and Assistant Professor of Medicine at the University of Toronto. Dr. Weizman has an interest in quality improvement in gastrointestinal disease and is involved in researching innovative models of delivering high quality care.

We welcome Dr. Zane Gallinger as a new staff member in the division of Gastroentrology at Mount Sinai Hospital. He completed his gastroenterology residency at the University of Toronto and an advanced IBD fellowship in New York City at Mount Sinai Hospital through the Icahn School of Medicine. He also completed his Master's of Science in Health Education at McMaster University.

We welcome Dr. Laura Targownik as new staff member in the division of Gastroentrology at Mount Sinai Hospital. She went to University of California Los Angeles (UCLA) to complete a 3-year fellowship in Digestive Diseases while also obtaining a Master's of Science (Health Services) from the UCLA School of Public Health. Dr. Targownik is a nationally recognized researcher in IBD and has held funding from Crohn's and Colitis Canada, the American College of Gastroenterology and the Canadian Institutes of Health Research. She is currently on the Examiner's Board on the Royal College of Physicians and Surgeons of Canada for Gastroenterology. Dr. Targownik is a member of numerous research consortia, including the Canadian IBD Research Consortium, the Canadian Gastrointestinal Epidemiology Consortium and the Canadian IBD Transitions in Care Network. She is also the chair for Equity and Diversity for the Canadian Association of Gastroenterology where she is spearheading several initiatives with the aim of improving the representation of women in positions of leadership and influence in gastroenterology.

Mount Sinai Hospital
Sinai Health System
Joseph & Wolf Lebovic Health Complex
ZANE COHEN CENTRE FOR DIGESTIVE DISEASES

NETWORK

Fall 2020

New Studies

Familial Adenomatous Polyposis Study

We are pleased to announce we will be starting a new FAP study at Mount Sinai Hospital in the late spring pending approvals. This study will determine the safety and effectiveness of an investigational medicine and is being evaluated in people with familial adenomatous polyposis (FAP).

- Are 18 years of age or older
- Have been diagnosed with FAP that involves the colon and rectum
- Are receiving no other medication for FAP

Additional eligibility criteria will be assessed during the screening process prior to being enrolled in the study. Not all individuals may qualify to participate in the research study. If eligible, you will be in the study for up to one year and visit the study doctor or research staff approximately 10 times. You will be randomly assigned to one of three treatment groups. This means you will either receive a placebo (contains no active medicine) or the investigational medicine. Neither you nor the study team will know which treatment group you are in. You will receive the study medicine as a shot (injection) given by the study staff. The needle is put just under the skin in your stomach, thighs, or the back of upper arm. You will undergo an endoscopy at the beginning and at the end of the study to measure the size of your polyps and determine what affect, if any, the study medicine had. For more information about this study please contact the Study Coordinator: Beverly Schmocker by phone 416-586-8700 X8286# or by email, Beverly.schmocker@sinaihealth.ca

Use of cell free DNA in early detection of cancer in Lynch Syndrome patients

Cell free DNA analysis (liquid biopsy) is a new genetic technology which test fragments of DNA released by cells such as cancer cells. Dr Raymond Kim, ZCC medical geneticist, and Dr Trevor Pugh, molecular geneticist at Princess Margaret are examining the use of cell free DNA in the early detection of cancer in Lynch syndrome patients. Drs Kim and Pugh received funding from the Canadian Institutes of Health Research ($1.9M) and the TD Ready Challenge ($1M) and lead a pan-Canadian study recruiting patients form five other cancer centres. The grant aims to develop an effective blood test for early cancer detection. The test will aim to help those with hereditary cancer syndrome, including individuals with Lynch Syndrome and people that carry BRCA1/2 mutations. With TD's funding, Pugh, Kim, and collaborators across Canada will work to create an accessible blood-based screening test that can detect cancers earlier than current methods, and guide more personalized management of individuals at high risk of developing the disease.

FAQ about COVID-19 Virus

How is COVID-19 transmitted?

COVID-19 is primarily transmitted via droplets that are expelled from a person's mouth or nose when they cough, sneeze or speak. These droplets are too heavy to remain suspended in the air and don't travel far before falling to the ground or other surfaces. These droplets spread the virus in a couple of ways:

- If you are in close proximity to someone who is infected (the person may not even know they are infected), the droplets they expel by coughing, sneezing or speaking could carry the virus into your eyes, nose or mouth and you may then become infected. This is why masks and physical distancing help stop the spread of COVID-19.
- When a person who has COVID-19 coughs or sneezes, the virus-carrying droplets can land on surfaces such as door handles or phones, if you then touch that surface and then touch your eyes, nose or mouth you may become infected. It is important to perform hand hygiene frequently and vigilantly.

What is the difference between droplet spread and aerosol spread?

DROPLET TRANSMISSION: Imagine someone throwing paint in your face from a paint can. As long as there is a physical barrier protecting your eyes, nose and mouth, the paint will not get into your eyes, nose and mouth. This is how COVID-19 is routinely spread.
AIRBORNE TRANSMISSION: Imagine someone is spraying spray paint in the same room as you. Spraying paint aerosolizes it and can cause it to be light enough to stay lingering in the air. In this case, you would need an N95 respirator to protect your airway from inhaling the paint. This is how COVID-19 can sometimes be spread: only when an aerosol generating medical procedure (AGMP) has occurred as determined by clinical staff.

How long is a person who has COVID-19 contagious and capable of infecting others?

At this time, the best available evidence suggests that COVID-19 is not transmissible after approximately eight days after symptom onset and we have not seen transmission of COVID-19 from individuals 14 days or more after symptom onset.

Contact Us

Zane Cohen Centre
60 Murray Street L3-000
Toronto ON M5T 3L9
P: 416-586-5112
P (toll free): 1-877-586-5112
E: ZaneCohenCentre.msh@sinaihealth.ca
www.zanecohencentre.com

Support the Zane Cohen Centre

Your donation can help the Zane Cohen Centre "join the dots more quickly" to bring new knowledge into practice for better care for patients and their families. There are many ways to support our work. These include gifts of cash, stocks or existing insurance policies. Legacy gifts to the Zane Cohen Centre can also be designated in a will.

To donate online: www.zanecohencentre.ca/donate
or call: 416-586-8203, toll free: 1-877-565-8555 or email: foundation.MSH@sinaihealth.ca
Sinai Health Foundation
1001-522 University Avenue
Toronto, Ontario M5G 1W7