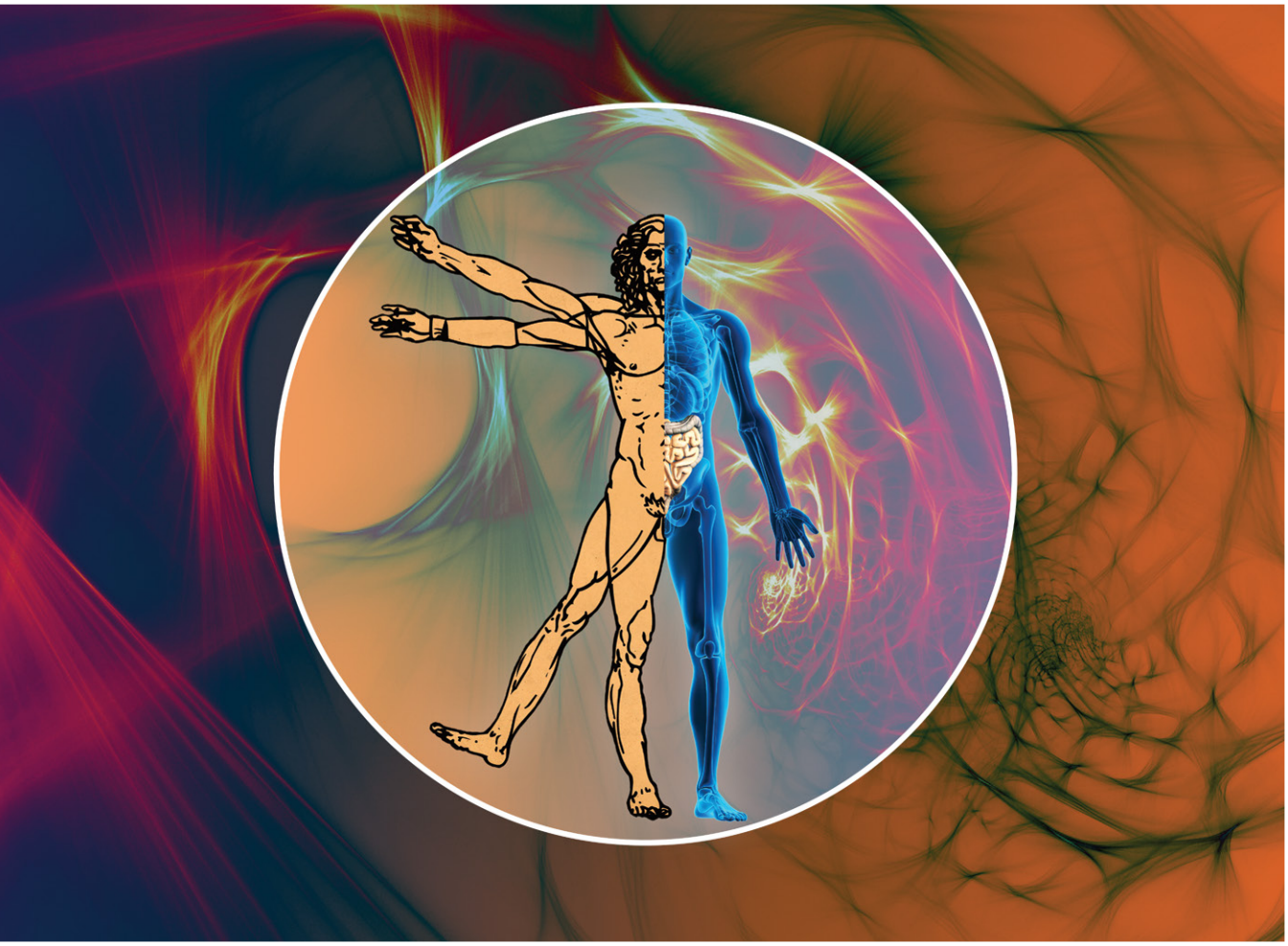
MEETING OF THE MINDS

VIRTUAL NATIONAL MEETING

SATURDAY, November 7, 2020

Canada Future Directions in IBD



Co-Chairs: **Remo Panaccione**, MD FRCPC and **A. Hillary Steinhart**, MD MSc FRCPC

Crohn's and Colitis Canada
Crohn et Colite Canada

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MEETING OF THE MINDS

VIRTUAL NATIONAL MEETING

MENTORING in IBD XXI
THE MASTER CLASS

Canada Future Directions in IBD

Mentoring in IBD XXI Curriculum and Canada Future Directions in IBD are funded by unrestricted educational grants from...

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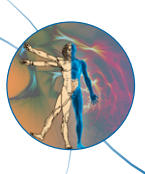

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ABOUT Canada Future Directions in IBD

Canada Future Directions in IBD is Crohn's and Colitis Canada's premier conference for healthcare professionals and researchers who care for patients with inflammatory bowel diseases (IBD) and carry out research into these disorders.

One of the goals of *Canada Future Directions in IBD* is to present the best new scientific research in IBD and advance knowledge on the state of the science. Crohn's and Colitis Canada's Promise Statement and Mission statements emphasize our long-term commitment to finding cures for Crohn's disease and ulcerative colitis as well as our commitment to undertakings that will have a more immediate impact on the lives of Canadian children and adults affected by these chronic diseases.

Our Promise: To cure Crohn's disease and ulcerative colitis and improve the lives of children and adults affected by these chronic diseases.

Our Mission: Crohn's and Colitis Canada will raise funds to:

- Invest in Crohn's and colitis research to foster advances in prevention, treatments, cure, and health policy
- Educate patients, families, industry and governments about Crohn's and colitis, and improve the quality of life of those affected by these chronic diseases
- Increase public awareness of these chronic disease and our organization
- Advocate to governments and stakeholders on behalf of those affected by Crohn's or colitis

Knowledge translation is important to delivering on our Promise. Now in its ninth year, the *Canada Future Directions in IBD* national symposium remains one of our key programs to translate what is learned in research into the hands of the practitioners treating IBD patients and to highlight the significant progress being made by our funded researchers.

Again this year, *Canada Future Directions in IBD* hosts the Canadian IBD Nurses (CANIBD) Annual Conference held in collaboration with the Canadian Society of Gastroenterology Nurses & Associates (CSGNA). This educational initiative provides nurses with a tailored program to meet their evolving needs.

Crohn's and Colitis Canada
Crohn et Colite Canada

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Sandra Zelinsky
Lead Patient Engagement Researcher
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AWARD PRESENTATIONS

Research Leadership Award

Aleixo Muise, MD PhD FRCPC
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Clinician-Scientist, Division of Gastroenterology, Hepatology and Nutrition
Co-Director SickKids IBD Centre
Senior Scientist, Program in Cell Biology, Research Institute
Hospital for Sick Children
Professor of Biochemistry, Institute of Medical Sciences, and Pediatrics,
University of Toronto, Toronto ON

Rising Star Award

Yasmin Nasser, MD PhD FRCPC
Clinical Assistant Professor
Division of Gastroenterology and Hepatology
Snyder Institute for Chronic DIsease
Calgary Gut Motility Group
Department of Medicine
Calgary, AB

Junior Investigator Award

Neeraj Narula, MD MPH FRCPC
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Hamilton Health Sciences
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Hamilton, ON

CANADA FUTURE DIRECTIONS IN IBD SCIENTIFIC STEERING COMMITTEE

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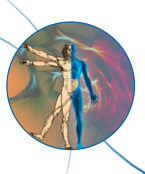


LEARNING OBJECTIVES

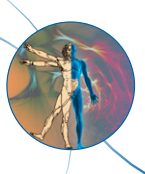
Canada Future Directions in IBD reaches forward to translate what is learned in research into the hands of practitioners treating patients living with inflammatory bowel diseases, to present the best new scientific research in IBD and to advance knowledge on the state of the science.

Participants in this program will be able to:

- Review the accomplishments of PACE
- Examine the key findings of the Genetics, Environmental and Microbial (GEM) project
  - Consider the future of research in IBD
  - Discuss the effect on clinical practice
  - Appraise dietary therapy in IBD
- Examine the key findings of Inflammation, Microbiome, and Alimentation: Gastro-Intestinal and Neuropsychiatric Effects (IMAGINE)
  - Explore the effects on practice
  - Review the Strategy for Patient Oriented Research (SPOR)
  - Consider the status and integration of patient oriented research
- Integrate basic science and clinical practice by participation in a choice of workshop to:
  - Examine pandemics, practice and policy in IBD, or
  - Discuss the microbiome, or
  - Review IBD research in the COVID-19 world, or
  - Reflect on new era, new science, new antibodies, or
  - Consider how patients make decisions regarding therapy

AGENDA (Eastern Standard Time)

Time EST	Topic	Speaker
11:00	**0.1** Welcome: Nurse of the Year Award, Physician of the Year Award	Susan Cowan, CCC CEO
11:05	**0.2** Opening Remarks – Welcome, program objectives	CO-CHAIRS: Remo Panaccione, Hillary Steinhart
11:10	**0.3** PACE Turns 4: Highlights and Accomplishments	Geoffrey Nguyen
Session I: GEM Update and How It Will Affect Practice		SESSION CHAIR: Laura Targownik
11:30	**1.1** Genetics, Environmental and Microbial (GEM) Project Update	Ken Croitoru
11:50	**1.2** Diet and IBD	Lindsey Albenberg
12:10	Ask-the-Expert Panel Session	MODERATOR: Laura Targownik PANEL: Lindsey Albenberg, Ken Croitoru, Maitreyi Raman, Eytan Wine
12:25	**1.3** Meeting of the Minds Junior Investigator Award Presentation: *Association of Processed Food Intake with Risk of Inflammatory Bowel Disease: Results from the Prospective Urban Rural Epidemiology (PURE) Study*	MODERATOR: Remo Panaccione SPEAKER: Neeraj Narula
12:45	Stretch Break (10 minutes)	
Session II: IMAGINE Update and How It Will Affect Practice		SESSION CHAIR: Charles Bernstein
12:55	**2.1** 1 Inflammation, Microbiome, and Alimentation: Gastro-Intestinal and Neuropsychiatric Effects (IMAGINE) Update *IMAGINE Network's Magic Study*	Paul Moayyedi
13:15	**2.2** Strategy for Patient Oriented Research (SPOR) Update	Deborah Marshall
13:35	Ask-the Expert Panel Session	MODERATOR: Charles Bernstein PANEL: Deborah Marshall, Paul Moayyedi, Laura Targownik, Sandra Zelinsky
13:50	**2.3** Rising Star Award Presentation: *The Microbiome, Chronic Abdominal Pain and IBD*	MODERATOR: Kate Lee SPEAKER: Yasmin Nasser
14:10	Placement in Zoom workshop breakout rooms	
Session III: Workshops – Hot Topics from Bench to Clinic to Policy		
14:10	**3.1** IBD: Pandemics, Practice and Policy	Eric Benchimol, Jennifer Jones
	3.2 Microbiome	Kathy McCoy, Michael Surette
	3.3 IBD Research in the COVID-19 World	Gilaad Kaplan, Nicola Jones
	3.4 New Era, New Science, New Antibodies	Waqqas Afif, Niels Vande Casteele
	3.5 How Patients Make Decisions Regarding Therapy	Deborah Marshall, Sandra Zelinsky
14:40	**4.0** Research Leadership Award & Presentation: *Precision Medicine in IBD: Novel diseases to novel therapies*	MODERATOR: Kate Lee SPEAKER: Aleixo Muise
15:00	Closing Remarks and Program Evaluation	CO-CHAIRS: Remo Panaccione, Hillary Steinhart



SCHEDULE OF EVENTS (Eastern Standard Time)

Saturday, November 7, 2020			
Time EST	**Event**		**Location**
11:00	Meeting Convenes		Plenary Zoom Room Delegates will turn microphones and cameras OFF
12:45	Stretch Break		
12:55	Meeting Reconvenes		Plenary Zoom Room Delegates will turn microphones and cameras OFF
14:10	Workshop Breakouts	IBD: Pandemics, Practice and Policy	Workshop Zoom Rooms Delegates will be placed automatically into their Zoom breakout (using Zoom email provided at registration) Delegates will turn microphones and cameras ON
		Microbiome	
		IBD Research in the COVID-19 World	
		New Era, New Science, New Antibodies	
		How Patient Make Decisions Regarding Therapy	
14:40	Canada Future Directions in IBD Reconvenes		Plenary Zoom Room Delegates will turn microphones and cameras OFF
15:10	Canada Future Directions Meeting Adjourns		Complete Evaluation

WORKSHOP BREAKOUT GROUPS AND FACILITATORS

Workshop Groups 14:10 – 14:40 EST	
Workshop Name	**Presenters/Facilitators**
3.1 IBD: Pandemics, Practice and Policy	Eric Benchimol and Jennifer Jones
3.2 Microbiome	Kathy McCoy and Michael Surette
3.3 IBD Research in the COVID-19 World	Gilaad Kaplan and Nicola Jones
3.4 New Era, New Science, New Antibodies	Waqqas Afif and Niels Vande Casteele
3.5 How Patients Make Decisions Regarding Therapy	Deborah Marshall and Sandra Zelinsky

- Workshop breakout groups are pre-assigned based on your choice at the time of registration
- You will be automatically placed into your workshop group
  - The email address that your Zoom account was created with has been used to place you into your workshop
  - Please make sure you have created a Zoom account and provided the correct email address with your registration

PACE Turns 4: Highlights and Accomplishments

Geoffrey Nguyen, MD PhD FRCPC

PURPOSE: Promoting Access and Care through Centres of Excellence (PACE) brings together leading IBD centres to collectively advance best practices and elevate the standard of care for patients.

SCOPE: Launched in 2016, PACE is Canada's first national network of five leading IBD centres of excellence working together to address gaps in patient care.

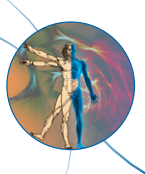
METHODS: Phase one of the PACE initiative revolved around four specific programs:

- *Servicing Remote Communities Through Telemedicine*, which will enable IBD patients residing in remote regions with poor access to gastroenterology care to receive consultative services from IBD specialists at centres of excellence using provincial telemedicine networks.
- *Reducing Chronic Steroid Use*, which will provide an algorithmic approach to standardizing care to minimize repeated use of systemic steroids and their complications.
- *Monitoring Patient Health Using Innovative Technology*, which will facilitate the communication of patient-reported outcomes to healthcare providers to help guide disease management, empower patients to be actively involved in their IBD care, and improve adherence to treatments.
- *Measuring Benchmarks in Care Delivery*, which will provide the tools to measure the effectiveness of quality improvement interventions, and give IBD clinics across Canada the ability to measure their own performance and engage in quality improvement activities.

RESULTS: The PACE program improved and transformed IBD care delivery by integrating excellence in patient care and research. These programs have established tools to standardize evidence-based care for IBD patients, increased access to IBD specialists, reduced wait times to national standards, and improved innovative health technologies available to IBD patients.

Key References

1. Habashi P, Bouchard, S, Nguyen, G. Transforming Access to Specialist Care for Inflammatory Bowel Disease: The PACE Telemedicine Program. *J Can Assoc Gastroenterol*. 2019;2(4):186–94.
2. Bitton A, Vutcovici M, Lytvyak E, et al. Selection of Quality Indicators in IBD: Integrating Physician and Patient Perspectives. *Inflamm Bowel Dis*. 2019;25(2):403–9.
3. Bitton A, Devitt KS, Bressler B, et al. Development of a Global Rating Scale for Inflammatory Bowel Disease. *J Can Assoc Gastroenterol*. 2020;3(1):4–16.



SESSION I

GEM UPDATE AND HOW IT WILL AFFECT PRACTICE

Genetics, Environmental and Microbial (GEM) Project Update

Kenneth Croitoru, MDCM FRCPC

The Crohn's and Colitis Canada GEM project was designed to explore the possible genetic, environmental, and microbial triggers of Crohn's disease (CD). The approach involved recruiting healthy first-degree relatives of CD probands with an increased risk of developing CD and prospectively monitoring them until development of the disease. Samples taken at recruitment are now being analyzed to look for possible pre-disease signals that predict the development of CD. These signals can then be assessed for their possible pathophysiological significance in the development of CD.

To date, more than 5000 subjects have been recruited, and approximately 95 subjects have developed CD. We have begun to analyze barrier function integrity using ratio of fractional excretion of lactulose to mannitol as a marker of disease risk.[1] We are now completing the stool microbial composition analysis in individuals who develop the disease and have developed a machine learning algorithm that defines the risk of disease development using pre-disease stool composition. We have also begun to assess serological markers, including a panel of antimicrobial antibodies from the Prometheus panel, proteomic markers (Olink) and metabolomics measurements as predictors of disease. All of these parameters have been assessed in the context of possible pre-existing subclinical inflammation using fecal calprotectin. The published results[1–3] of some of these analyses will be discussed. One can imagine how the development of a multiparameter risk score will be used to identify high-risk individuals who may benefit from interventions to prevent CD development.

References

1. Turpin W, Lee S-H, Raygoza Garay JA, et al. Increased Intestinal Permeability is Associated with Later Development of Crohn's Disease. *Gastroenterology*. 2020: S0016-5085(20)35021-6.
2. GEM Project Research Consortium, Turpin W, Espin-Garcia O, Xu W, et al. Association of host genome with intestinal microbial composition in a large healthy cohort. *Nat Genet*. 2016;48:1413–17.
3. Turpin W, Espin-Garcia O, Bedrani L, et al. Analysis of Genetic Association of Intestinal Permeability in Healthy First-degree Relatives of Patients with Crohn's Disease. *Inflamm Bowel Dis*. 2019;25:1796–804.

SESSION I

GEM UPDATE AND HOW IT WILL AFFECT PRACTICE

Diet and IBD

Lindsay Albenberg, DO

The goals for managing IBD are to eliminate symptoms of disease, improve quality of life, avoid hospitalization and surgery and, ultimately, achieve mucosal healing. Currently, the mainstays of IBD therapy are medications such as immunomodulators and biologics. The majority of these medications cause immune suppression, so adverse events are sometimes unavoidable. Understandably, patients and families often find the potential for adverse events overwhelming and they desire therapeutic regimens that do not involve suppression of the immune system. Given data demonstrating epidemiologic associations between diet and IBD,[1] dietary therapies for IBD—particularly Crohn's disease (CD)—have been considered. It is well known that IBD patients consider diet to be important, as patients with IBD frequently identify dietary components that cause increased symptoms and often follow self-imposed restricted diets. With the exception of enteral nutritional therapy for the treatment of CD, there is no rigorously studied diet for the treatment of IBD that has consistently demonstrated benefit across multiple studies. Thus, clinicians need to weigh epidemiologic and animal-model-based evidence, data from the limited number of clinical trials, and patient priorities.

Enteral nutritional therapy has been used to treat CD for many decades and multiple studies have demonstrated efficacy with response and remission rates comparable to pharmacological therapies. In CD, exclusive enteral nutrition with elemental, semi-elemental, or polymeric formula diets has been widely studied for induction of remission.[2] Additionally, therapeutic whole food-based diets, such as Chiba and colleagues' semi-vegetarian diet to prevent relapse[3] and Levine and colleagues' Crohn's Disease Exclusion Diet[4] to induce remission, have demonstrated efficacy in specific populations of CD patients. It is important to note that these and other exclusion diets have not been sufficiently studied, but this should not necessarily be a deterrent. Patient selection and monitoring objective outcomes of disease activity are critical.

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1. Lo C-H, Lochhead P, Khalili H, et al. Dietary Inflammatory Potential and Risk of Crohn's Disease and Ulcerative Colitis. *Gastroenterology*. 2020 Sep;159(3):873–83. Epub 2020 May 7.
2. Swaminath A, Feathers A, Ananthakrishnan AN, et al. Systematic review with meta-analysis: enteral nutrition therapy for the induction of remission in paediatric Crohn's disease. *Aliment Pharmacol Ther*. 2017 Oct;46(7):645–56.
3. Chiba M, Abe T, Tsuda H, et al. Lifestyle-related disease in Crohn's disease: relapse prevention by a semi-vegetarian diet. *World J Gastroenterol*. 2010;16(20):2484–95.
4. Boneh RS, Van Limbergen J, Wine E, et al. Dietary Therapies Induce Rapid Response and Remission in Pediatric Patients With Active Crohn's Disease. *Clin Gastroenterol Hepatol*. 2020 Apr 14;S1542-3565(20)30487-0.

SESSION I

CROHN'S AND COLITIS CANADA'S JUNIOR INVESTIGATOR AWARD PRESENTATION

Association of Processed Food Intake with Risk of Inflammatory Bowel Disease: Results from the Prospective Urban Rural Epidemiology (PURE) Study

Neeraj Narula,[1,2] Emily C.L. Wong,[1] Mahshid Dehghan,[2] Andrew Mente,[2] Sumathy Rangarajan,[2] Shofiqul Islam,[2] Fernando Lanas,[3] Patricio Lopez-Jaramillo,[4] Priyanka Rohatgi,[5] P V M Lakshmi,[6] Ravi Prasad Varma,[7] Andres Orlandini,[8] Alvaro Avezum,[9] Andreas Wielgosz,[10] Paul Poirier,[11] Majid A. Almadi,[12] John K. Marshall,[1] Paul Moayyedi,[1,2] Walter Reinisch,[13] Salim Yusuf,[2] On behalf of the PURE investigators.

[1]Department of Medicine (Division of Gastroenterology) and Farncombe Family Digestive Health Research Institute; McMaster University, Hamilton, ON, Canada; [2]Population Health Research Institute, McMaster University and Hamilton Health Sciences, Hamilton, ON, Canada; [3]Universidad de La Frontera, Temuco, Chile; [4]Masira Research Institute, Universidad de Santander (UDES) Fundación Oftalmológica de Santander-FOSCAL – Bucaramanga, Colombia; [5]Chief Clinical Dietician, HOD, Dept. of Nutrition and Dietetics, Apollo Hospitals, Bannerghatta Road, Bangalore, India; [6]Professor of Epidemiology School of Public Health Post Graduate Institute of Medical Education & Research Chandigarh, India; [7]Achutha Menon Centre for Health Science Studies, SCTIMST and Health Action by People, Thiruvananthapuram, India; [8]Estudios Clinicos Latinoamerica ECLA Rosario, Santa Fe Argentina; [9]Hospital Alemao Oswaldo Cruz & UNISA Sao Paulo, SP Brazil; [10] University of Ottawa Department of Medicine, Ottawa, ON, Canada; [11]Faculté de pharmacie, Université Laval Institut universitaire de cardiologie et de pneumologie de Québec, Québec, QC, Canada; [12]Division of Gastroenterology, Department of Medicine, College of Medicine, King Saud University. Riyadh, Saudi Arabia; [13]Department of Internal Medicine III, Division of Gastroenterology and Hepatology, Medical University of Vienna, Vienna, Austria.

Presented by: *Neeraj Narula, MD MPH FRCPC*

BACKGROUND: Dietary factors may influence the risk of developing inflammatory bowel disease (IBD), but evidence from large, prospective studies is scarce. This study aimed to evaluate the relationship between processed food intake and the risk of developing IBD in the prospective PURE cohort study.

METHODS: This was a prospective cohort study (Prospective Urban Rural Epidemiology [PURE]) of 116,087 individuals between the ages of 35–70 from 21 countries across seven geographic regions. Country-specific validated food frequency questionnaires were used to document baseline dietary intake. Participants were followed prospectively at least every 3 years. The main clinical outcome for this study was development of IBD, including Crohn's disease (CD) or ulcerative colitis (UC). Cox proportional hazard multivariate models were used to assess associations between processed food intake and risk of IBD. Results are presented as hazard ratios (HR) with 95% confidence intervals (CI).

FINDINGS: Participants were enrolled in the study between 2003 and 2016. During the median follow-up of 9.7 years (IQR 8.9–11.2), we recorded 467 incident cases of IBD (90 with CD and 377 with UC). Higher processed food intake was associated with a higher risk of incident IBD (HR 1.82, 95% CI 1.22–2.72 for ≥5 servings/day and HR 1.67, 95% CI 1.18–2.37, for 1–4 servings/day as compared to <1 serving/day, p_{trend}=0.006), after adjustment for potential confounding factors (Table 1). Different subgroups of processed food including soft drinks, sweets, salty snacks, and processed meat each were associated with higher HR for IBD. Results were consistent in UC and CD with low heterogeneity. White meat, red meat, dairy, starch, fruits, vegetables, and legumes intake were not associated with incident IBD.

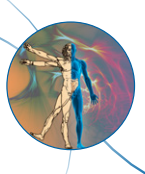
INTERPRETATION: Higher processed food consumption was positively associated with development of IBD. Further studies are needed to identify the potential culprits within processed foods.

Table 1. Association Between Total Processed Food Intake (USDA servings/day) and Development of IBD

	<1 serving/day	1 to <5 servings/day	≥5 servings/day	P trend
IBD				
No. of participants	76,415	25,453	11,742	
No. of events (%)	199 (0.26)	134 (0.53)	95 (0.81)	
Unadjusted HR (95% CI)	1 (reference)	2.20 (1.77–2.74)	3.18 (2.49–4.07)	<0.0001
Min. adjusted HR (95% CI)	1 (reference)	1.41 (1.11–1.79)	1.42 (1.07–1.90)	0.0105
Fully adjusted HR (95% CI)	1 (reference)	1.67 (1.18–2.37)	1.82 (1.22–2.72)	0.0063
Crohn's disease				
No. of participants	76,415	25,453	11,742	
No. of events (%)	34 (0.04)	23 (0.09)	30 (0.26)	
Unadjusted HR (95% CI)	1 (reference)	2.19 (1.29–3.72)	5.84 (3.57–9.54)	<0.0001
Min. adjusted HR (95% CI)	1 (reference)	1.15 (0.64–2.06)	1.92 (1.05–3.49)	0.0699
Fully adjusted HR (95% CI)	1 (reference)	2.72 (1.06–6.97)	4.50 (1.67–12.13)	0.0103
Ulcerative colitis				
No. of participants	76,415	25,453	11,742	
No. of events (%)	165 (0.22)	111 (0.44)	65 (0.55)	
Unadjusted HR (95% CI)	1 (reference)	2.20 (1.73–2.80)	2.63 (1.97–3.51)	<0.0001
Min. adjusted HR (95% CI)	1 (reference)	1.48 (1.13–1.93)	1.27 (0.91–1.77)	0.0151
Fully adjusted HR (95% CI)	1 (reference)	1.55 (1.06–2.28)	1.46 (0.93–2.28)	0.0761

Heterogeneity of results from Crohn's disease and ulcerative colitis - Chi^2 p-value=0.595; $I^2 = 0\%$.

Minimal adjustments are for age, gender, and geographic region. Fully adjusted model includes age, gender, geographic region, education, alcohol intake, smoking status, BMI, total energy intake and location.



SESSION II

IMAGINE UPDATE AND HOW IT WILL AFFECT PRACTICE

IMAGINE Network's Magic Study

Paul Moayyedi, MB ChB PhD MPH FRCP (London) FRCPC FACG AGAF

The IMAGINE (Inflammation, Microbiome, and Alimentation: Gastro-Intestinal and Neuropsychiatric Effects) Chronic Disease Network is a pan-Canadian research network studying the interactions between inflammation, microbiome, diet and mental health in patients with inflammatory bowel disease (IBD) and irritable bowel syndrome (IBS).

The IMAGINE Network's main study, Mind And Gut Interactions Cohort (MAGIC), is creating a large cohort of patients with IBS, IBD and healthy controls and following these individuals annually for five years. The program collects patient information using validated questionnaires assessing disease activity, quality of life, physical pain, lifestyle factors, psychological status, and diet; and collects stool, urine and blood samples to correlate GI and psychological symptoms with diet, microbiome[1,2] and its metabolome. This observational prospective cohort study will recruit 8000 participants from 15 centres across Canada. Patients with a confirmed diagnosis of IBS who are 13 years of age and older or a confirmed diagnosis of IBD five years of age or older will be identified and recruited. Healthy controls (without GI symptoms) will be recruited from the general public and from partners/friends or relatives of those with IBD or IBS. By the end of September 2020, MAGIC had recruited 4416 subjects (55% of target)—1747 with Crohn's disease, 1116 with ulcerative colitis, 750 with IBS, and 752 healthy controls.

Furthermore, the IMAGINE Network is supporting 23 sub-studies categorized in six key thematic areas: (1) Microbiome; (2) Diet & environment; (3) Psychiatry & mental health; (4) Patient engagement; (5) Health services; and (6) Sex & gender.

The Network's activities extend beyond its research program. It has also developed core competencies in patient engagement, capacity building and knowledge translation.

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SESSION II

IMAGINE UPDATE AND HOW IT WILL AFFECT PRACTICE

Strategy for Patient Oriented Research (SPOR) Update

Deborah A. Marshall, PhD

Patient-oriented research is about engaging patients, their caregivers and families as active partners in research, focusing on patient-identified priorities and with the goal of the patient receiving the right care in the right place at the right time. In patient-oriented research, patients are recognized as experts through their own lived experience.

The Canadian Institutes for Health Research Strategy for Patient-Oriented Research (SPOR), launched in 2011, aims to provide evidence to inform health policy, improve health care and, ultimately, achieve benefits that matter to patients. The SPOR initiative funded five chronic disease networks to facilitate patient-oriented research. This session will provide an overview of the value of patient-oriented research in general, and provide an update on the current status of patient-oriented research, with particular attention to research in digestive health.

IMAGINE (Inflammation, Microbiome, and Alimentation: Gastro-Intestinal and Neuropsychiatric Effects) is a SPOR chronic disease network focused on investigating the interactions between inflammation, microbiome, diet and mental health in patients with inflammatory bowel disease (IBD) and irritable bowel syndrome (IBS). IMAGINE undertakes a range of patient-oriented research projects that engage patients as partners and focuses on patient-identified priorities. The research is conducted by multidisciplinary teams and aims to apply the knowledge generated to improve healthcare systems and practices. The IMAGINE team has also invested in capacity-building for patient engagement through patient research partners, as well as research training through the Patient and Community Engagement Research Program.

Key References

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Strategy for Patient-Oriented Research (SPOR). Patient Engagement Framework. Canadian Institutes for Health Research, 2014. https://cihr-irsc.gc.ca/e/documents/spor_framework-en.pdf

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SESSION II

CROHN'S AND COLITIS CANADA'S RISING STAR AWARD PRESENTATION

The Microbiome, Chronic Abdominal Pain and IBD

Yasmin Nasser, MD PhD FRCPC

Objectives

1. Recognize the burden of chronic pain in the absence of inflammation in IBD
2. Explore how microbial manipulation modulates the development of visceral pain in a mouse model of IBD
3. Demonstrate that microbial derived soluble products are able to sensitize pain-sensing neurons

SESSION III

WORKSHOPS – HOT TOPICS FROM BENCH TO CLINIC TO POLICY

IBD: Pandemics, Practice and Policy

Eric Benchimol, MD PhD FRCPC
Jennifer Jones, MD MSc FRCPC

Case 1

It is April 2020 and you are conducting a virtual visit at the request of a patient, Ms. Jones, who you have been following since 2016 for ileocolonic Crohn's disease (CD).

Ms. Jones is a 37-year-old female who was diagnosed in 2010 with long-segment ileal CD after presenting with an acute small bowel obstruction. She underwent an extended ileocolonic resection (>35 cm) with primary ileocolonic anastomosis. She was followed by a different specialist after her surgery and was treated with 5-ASA with no further follow-up.

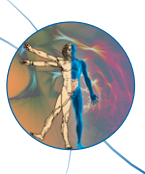
In 2016 she was admitted to hospital after presenting with an acute CD flare with acute on chronic diarrhea, right lower quadrant abdominal pain, a nine-kilogram (20-pound) weight loss and CT enterography findings consistent with recurrent long-segment ileal CD. She was induced with IV methylprednisolone and received infliximab in combination with azathioprine (2 mg/kg; thiopurine methyltransferase [TPMT] phenotype normal). She achieved clinical remission and six months later you document endoscopic remission. She has been well since this time with recently documented therapeutic infliximab trough concentration and a normal fecal calprotectin.

In April 2020, during a virtual visit you learn that Ms. Jones is suffering from acute anxiety and emotional distress in relation to the COVID-19 pandemic and its impact on her work, her children, and her personal mental health. In the virtual visit, she is perseverating, tearful, and very fearful. She has several questions that she would like to discuss with you:

1. What risk does my medication put me at for contracting SARS-CoV-2?
2. Will I get sicker if I contract SARS-CoV-2?
3. What is the risk to my children?
4. How can I control my COVID-related anxiety? I have tried but I think I need help with this. Is this normal? Are others feeling this way?
5. I am an elementary grade school teacher. Should I be going back to work? How can I protect myself if I do go back to the classroom? What do I tell my employer?

Case 2

It is October 2020 and the second wave of COVID-19 has begun with demonstrated community transmission in your province. You are seeing Mr. Smith virtually. Mr. Smith is a 74-year-old male who you diagnosed as having moderately severe pan-ulcerative colitis six months previously. His medical comorbidities are HTN, obesity, and dyslipidemia. He had recently quit smoking just before his diagnosis. He was steroid refractory and started on



vedolizumab, which has been effective for induction and maintenance of steroid-free remission. When speaking with Mr. Smith, you learn that he lives in a COVID "hot spot" and has been moving about freely in his community in both indoor and outdoor venues and spaces. He says that he is "sick and tired" of COVID-19. He wants to get back to a normal life and feels that the overall risk of SARS-CoV-2 is "overblown".

How do you respond to Mr. Smith's concern?

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Higgins PDR, Ng S, Danese S, et al. The Risk of SARS-CoV-2 in Immunosuppressed IBD Patients. *Crohns Colitis 360*. 2020;2(2):otaa026.

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SESSION III

WORKSHOPS – HOT TOPICS FROM BENCH TO CLINIC TO POLICY

Microbiome

Kathy D. McCoy, PhD
Michael Surette, PhD

Methods for the analysis of the microbiome continue to evolve rapidly. Three general approaches will be briefly reviewed: microbiome profiling (e.g., 16S amplicon sequencing), metagenomics and culture-based approaches. Combining these approaches reveals the underlying complexity of the human gut microbiome. Application of these different approaches to fecal microbiota transplantation (FMT) in ulcerative colitis will be used to illustrate advantages and limitations of the different methodologies. The microbiome is known to influence the host innate and adaptive immune systems. Elucidating the underlying mechanisms involved in microbial-immune interactions will pave the way for effective microbial therapies. While the microbiome can regulate the immune system through multiple pathways, the role of microbial-derived metabolites in immune regulation and their potential roles in IBD will be highlighted.

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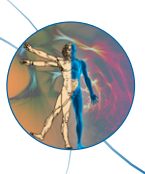

SESSION III

WORKSHOPS – HOT TOPICS FROM BENCH TO CLINIC TO POLICY

IBD Research in the COVID-19 World

Gilaad Kaplan, MD MPH FRCPC
Nicola Jones, MD PhD FRCPC

COVID-19 is a global health crisis with particular relevance for gastrointestinal (GI) researchers. This is due to both the ability of the virus to infect the GI tract and the potential concerns regarding the impact of infection on those with underlying GI diseases such as inflammatory bowel disease (IBD). In our workshop we will review the current state of clinical research with respect to COVID-19 and IBD, as well as highlight translational/basic research knowledge as it relates to the GI tract and COVID-19. We will then discuss potential opportunities where researchers can identify and address gaps in our current knowledge.

References

Brenner EJ, Ungaro RC, Gearry RB, et al. Corticosteroids, but not TNF Antagonists, are Associated with Adverse COVID-19 Outcomes in Patients with Inflammatory Bowel Diseases: Results from an International Registry. *Gastroenterology*. 2020;159(2):481–91.

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SESSION III

WORKSHOPS – HOT TOPICS FROM BENCH TO CLINIC TO POLICY

New Era, New Science, New Antibodies

Waqqas Afif, MD MSc(Epi) FRCPC
Niels Vande Casteele, PharmD PhD

Objectives

1. Review the latest understanding of therapeutic drug monitoring (TDM) with old and new biologic agents
2. Discuss novel approaches to understanding TDM (modelling, predictive models, machine learning)

Case Study

The patient is a 25-year-old male student weighing 50 kg. He was recently diagnosed with extensive ulcerative colitis based on six bowel movements per day (5 more than baseline) with rectal bleeding and colonoscopy demonstrating ulcerations (Mayo Score: 9). His CRP at baseline was elevated (80 mg/L) and albumin was 28 g/L. He was started on oral prednisone 40 mg, which provided only minimal help in clinical symptoms after two weeks. He is still tolerating fluids and does not want to be admitted. He is started on infliximab therapy.

Discussion Points

- Would population pharmacokinetic models help to guide dosing?
- How can predictive models guide treatment monitoring?
- Would early proactive TDM during induction be useful and change clinical management?

The patient achieves clinical and endoscopic remission on infliximab after dose escalation to 5 mg/kg every six weeks. After six months, there is a loss of response, with partial Mayo score of 4, CRP 20 mg/L and fecal calprotectin 450 mcg/g. Sigmoidoscopy shows left sided Mayo 2 colitis.

Discussion Points

- Reactive TDM (dose escalation vs changing biologics) with anti-TNFs:
  - Would a reactive TDM be useful and would it change clinical management?

Given high-titer antibodies, the patient is switched to ustekinumab, a biologic with lower immunogenicity. After four months of ustekinumab every eight weeks, he demonstrates partial response.

Discussion Points

- Reactive TDM with non-anti-TNF biologics:
  - Would a reactive TDM be clinically useful and would it change clinical management? Would this approach be different if the patient was on vedolizumab?
  - Would the advent of machine learning approaches have changed anything?

References

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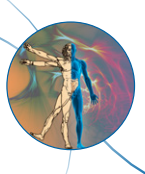

SESSION III

WORKSHOPS – HOT TOPICS FROM BENCH TO CLINIC TO POLICY

How Patients Make Decisions Regarding Therapy

Deborah A. Marshall, PhD
Sandra Zelinsky, Lead Patient Engagement Researcher

Session Objectives

- Discuss key concepts in how patients make decisions
- Discuss the concepts of shared decision-making

Options for IBD therapy have changed drastically over time, providing more treatment options for the care provider and patient to consider when making therapeutic decisions. This expands the list of factors to consider and makes the decision-making process more complicated (e.g., discussing short term and long-term therapy goals with IBD patients to maximize the use of medicines over the lifetime of their disease).

This session will consider and discuss what matters most to IBD patients when making treatment decisions in general (e.g. efficacy, side effects, etc.) and, more specifically what matters to individual patients and how they may value aspects of therapy differently (e.g., supports, logistics, risk factors). We will explore how patients value aspects of processes and delivery of therapies (e.g., intravenous or oral therapy) in addition to treatment effectiveness and how these values may differ from those of care providers.

We will discuss how more traditional approaches based on clinical trial evidence to inform decisions about therapies can be tailored to patient perspectives through methods such as shared decision-making (SDM) and elicitation of patient preferences. SDM and preference elicitation can inform conversations between the care provider and the patient to bridge the gap between the expertise and perspectives that each person brings to the table.

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Towle A, Godolphin W. Framework for teaching and learning informed shared decision making. *BMJ*. 1999;319:766–71.

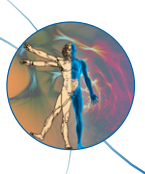
CROHN'S AND COLITIS CANADA'S RESEARCH LEADERSHIP AWARD PRESENTATION

Precision Medicine in IBD: Novel diseases to novel therapies

Aleixo Muise, MD PhD FRCPC

Objectives

- Review the monogenic causes of inflammatory bowel disease
- Define novel therapies for inflammatory bowel disease based on genetic defects



ACADEMIC ACTIVITIES ADDRESSING CANMEDS ROLES

Activity	Roles						
	Medical Expert	Communicator	Collaborator	Leader	Health Advocate	Scholar	Professional
Workshops **3.1** IBD: Pandemics, Practice and Policy **3.2** Microbiome **3.3** IBD Research in the COVID-19 World **3.4** New Era, New Science, New Antibodies **3.5** How Patients Make Decisions Regarding Therapy	X	X	X	X	X	X	X
Plenary Presentations **0.3** PACE Turns 4: Highlights and Accomplishments **1.1** Genetics, Environmental and Microbial (GEM) Project Update **1.2** Diet and IBD **1.3** Association of Processed Food Intake with Risk of Inflammatory Bowel Disease: Results from the Prospective Urban Rural Epidemiology (PURE) Study **2.1** Inflammation, Microbiome, and Alimentation: Gastro-Intestinal and Neuropsychiatric Effects (IMAGINE) Update **2.2** Strategy for Patient Oriented Research (SPOR) Update **2.3** The Microbiome, Chronic Abdominal Pain and IBD **4.0** Precision Medicine in IBD: Novel Diseases to Novel Therapies	X		X	X	X	X	X
Ask-the-Expert Panel Q&A Sessions **Session I:** GEM Update and How It Will Affect Practice – Plenary 1.1 & 1.2 **Session II:** IMAGINE Update and How It Will Affect Practice – Plenary 2.1 & 2.2	X	X	X	X	X	X	X
Program Evaluation	X	X	X		X	X	X

Medical Expert: As Medical Experts, physicians integrate all of the CanMEDS Roles, applying medical knowledge, clinical skills, and professional values in their provision of high-quality and safe patient-centred care. Medical Expert is the central physician Role in the CanMEDS Framework and defines the physician's clinical scope of practice.

Communicator: As Communicators, physicians form relationships with patients and their families that facilitate the gathering and sharing of essential information for effective health care.

Collaborator: As Collaborators, physicians work effectively with other health care professionals to provide safe, high-quality, patient-centred care.

Leader: As Leaders, physicians engage with others to contribute to a vision of a high-quality health care system and take responsibility for the delivery of excellent patient care through their activities as clinicians, administrators, scholars, or teachers.

Health Advocate: As Health Advocates, physicians contribute their expertise and influence as they work with communities or patient populations to improve health. They work with those they serve to determine and understand needs, speak on behalf of others when required, and support the mobilization of resources to effect change.

Scholar: As Scholars, physicians demonstrate a lifelong commitment to excellence in practice through continuous learning and by teaching others, evaluating evidence, and contributing to scholarship.

Professional: As Professionals, physicians are committed to the health and well-being of individual patients and society through ethical practice, high personal standards of behaviour, accountability to the profession and society, physician-led regulation, and maintenance of personal health.

http://www.royalcollege.ca/rcsite/canmeds/canmeds-framework-e

FACULTY FINANCIAL INTEREST DISCLOSURE SUMMARY

To ensure balance, independence, objectivity, and scientific rigour in all educational and scientific activities, the faculty participating in this educational event are expected to disclose to the audience any significant financial interest or other relationships. The intent of this initiative is to provide members of the audience with information on the speaker's and moderator's interests or relationships that could influence the presentation with respect to interpretations, recommendations, and conclusions.

Please note: Unless listed below, faculty disclosure information was not provided.

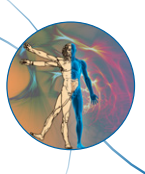
The following faculty have indicated that they **do not** have a significant financial interest:

Faculty	Applicable Date
Lindsey Albenberg	07 Nov 20
Eric Benchimol	07 Nov 20
Nicola Jones	07 Nov 20
Deborah Marshall	07 Nov 20
Kathy McCoy	07 Nov 20

Faculty	Applicable Date
Aleixo Muise	07 Nov 20
Geoffrey Nguyen	07 Nov 20
Maitreyi Raman	07 Nov 20
Michael Surette	07 Nov 20

The following faculty have indicated that they **do** have a significant financial interest:

Faculty	Applicable Date	Commercial Interest	Nature and resolution of relevant financial relationship		
			What was received?	For what role?	Planned resolution
Waqqas Afif	07 Nov 20	AbbVie, Amgen, Arena, Ferring, Innomar, Janssen, Merck, Pfizer, Novartis, Takeda	Honorarium	Speaker/Consultant/ Advisory Board	Program vetted by session leader
Charles Bernstein	07 Nov 20	AbbVie Canada, Bristol Myers Squibb Canada, Janssen Canada, Merck Canada, Pfizer Canada, Roche Canada, Sandoz Canada, Takeda Canada	Honorarium	Advisory Board	Program vetted by session leader
		Mylan Pharmaceuticals, Takeda	Honorarium	Consultant	
		AbbVie Canada, Janssen Canada, Pfizer Canada, Takeda Canada	Grant	Education Grant	
		AbbVie Canada, Janssen Canada, Takeda Canada, Pfizer Canada	Honorarium	Speaker	
		AbbVie Canada, Pfizer Canada	Grant	Research	
Vipul Jairath	07 Nov 20	AbbVie, Janssen, Pfizer, Takeda	Honorarium	Speaker	Program vetted by session leader
		Alimentiv Inc., Applied Strategic, Arena Pharma, Celgene/BMS, Celltrion, Eli Lily, Ferring, Fresenius Kabi, Hoffman-La Roche, Genentech, GlaxoSmithKline, Merck, Pendopharm, Sigmatic Ltd, Sublimity Therapeutics, Sandoz, Takeda	Honorarium	Consultant	



Faculty	Applicable Date	Commercial Interest	Nature and resolution of relevant financial relationship		
			What was received?	For what role?	Planned resolution
Jennifer Jones	07 Nov 20	AbbVie, Janssen, Shire, Takeda	Honorarium	Speaker	Talk vetted by session leader
Gilaad Kaplan	07 Nov 20	Abbvie, Janssen, Pfizer	Honorarium	Speaker	Talk vetted by ession leader
		Ferring	Grant Support	Research	
		Gilead	Honorarium	Consultant	
Neeraj Narula	07 Nov 20	AbbVie, Janssen, Pfizer, Novartis, Takeda	Honorarium	Speaker	Program vetted by Co-Chairs
		Ferring, Innomar, Sandoz	Honorarium	Advisory Board	
Yasmin Nasser	07 Nov 20	Allergan	Honorarium	Speaker	Not relevant to the current presentation
		Allergan	Grant Support	Principal Investigator, Clinical Trial	
Remo Panaccione	07 Nov 20	AI4GI, AbbVie, Amgen, Arena Pharmaceuticals, Atlantic Healthcare, BioBalance, Boehringer-Ingelheim, Bristol Myers Squibb, Celgene, Cosmo Technologies, Coronado Biosciences, Eagle, Eisai Medical Research, Elan, EnGene, Eli Lilly, Ferring, Genentech, Genzyme, Gilead, Given Imaging, GlaxoSmithKline, Innomar, Janssen, Lycera, Meda, Merck & Co., Merck Research Laboratories, MerckSerono, Novo Nordisk, PDL Biopharma, Pfizer, Prometheus Laboratories, Protagonist, Robarts Clinical Trials, Receptos, Salix, Sanofi, Sandoz, Shire Pharmaceuticals, Sigmoid Pharma, Specialty Rx, Sublimity, Takeda, Theradvance, Satisfai Heatlh	Honorarium	Consultant	Program vetted by Co-Chair
		AbbVie, Amgen, Arena Pharmaceuticals, AstraZeneca, Bristol Myers Squibb, Celgene, Eli Lilly, Ferring, Gilead, Janssen, Merck, Pfizer, Sandoz, Shire, Takeda	Honorarium	Speaker	
		Abbott, AbbVie, Amgen, Aptalis, Arena Pharmaceuticals, AstraZeneca, Baxter, Biogen Idec, Bristol Myers Squibb, Celgene, Cubist, Eisai, Elan, Ferring, Genentech, Gilead, GlaxoSmithKline, Hospira, Janssen, Merck, Mylan, Pfizer, Salix, Shire, Takeda	Honorarium	Advisory Board	
		AbbVie, Ferring, Janssen, Shire, Takeda	Research/ Educational Support	Investigator	
Hillary Steinhart	07 Nov 20	AbbVie, Amgen, Fresnius Kabi, Janssen, Merck, Mylan Pharmaceuticals, Novartis, Pfizer, Takeda	Honorarium	Advisory Board	Program vetted by Co-Chair
		Celgene, Genentech, Nubiyota,	Research Grant	Investigator	

Vifor	Applicable Date	Commercial Interest	Nature and resolution of relevant financial relationship		
			What was received?	For what role?	Planned resolution
Laura Targownik	07 Nov 20	AbbVie, Janssen, Pfizer, Sandoz, Roche, Takeda	Honorarium	Advisory Board Participant	No direct influence
		Gilead, Pfizer, Roche, Takeda	Grant Support	Clinical Data Repository	
		AbbVie, Janssen, Pfizer, Takeda	Honorarium	Speaker	
Niels Vande Casteele	07 Nov 20	Prometheus, Takeda, UCB	Honorarium	Advisory Board	Talk vetted by session leader
		Alimentiv Inc	Honorarium	Consulting	
		R-Biopharm, Takeda, UCB	Research Grant	Research	
		Celltrion	Honorarium	Speaker	
Eytan Wine	07 Nov 20	AbbVie, Janssen, Nestle	Honorarium	Speaker	Program vetted by session leader
		AbbVie, Nestle	Honorarium	Advisor	
Sandra Zelinsky	07 Nov 20	Takeda Canada	Consultant Fees	Qualitative patient Phase 1 project	Program vetted by Co-Chairs

The following faculty have indicated that the content of their presentation **will** include discussion of investigative use or off-label application of medicines, medical devices, or procedures:

Faculty	Applicable Date
Waqqas Afif	07 Nov 20
Vipul Jairath	07 Nov 20
Remo Panaccione	07 Nov 20

Faculty	Applicable Date
Hillary Steinhart	07 Nov 20
Niels Vande Casteele	07 Nov 20
Eytan Wine	07 Nov 20

The following faculty have indicated that the content of their presentation **will not** include discussion of investigative use or off-label application of medicines, medical devices, or procedures:

Faculty	Applicable Date
Lindsey Albenberg	07 Nov 20
Eric Benchimol	07 Nov 20
Charles Bernstein	07 Nov 20
Jennifer Jones	07 Nov 20
Nicola Jones	07 Nov 20
Gilaad Kaplan	07 Nov 20
Deborah Marshall	07 Nov 20
Kathy McCoy	07 Nov 20

Faculty	Applicable Date
Aleixo Muise	07 Nov 20
Neeraj Narula	07 Nov 20
Yasmin Nasser	07 Nov 20
Geoffrey Nguyen	07 Nov 20
Maitreyi Raman	07 Nov 20
Michael Surette	07 Nov 20
Laura Targownik	07 Nov 20
Sandra Zelinsky	07 Nov 20

NOTES

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