

CROHN'S AND  
COLITIS CANADA

# RESEARCH REPORT

2015-2016

MAKE IT STOP. FOR LIFE.



Crohn's and  
Colitis Canada  
Crohn et  
Colite Canada

# INTRODUCTION

Crohn's and Colitis Canada is proud to be the largest non-governmental funder of inflammatory bowel disease (IBD) research in Canada. We adopt stringent criteria to ensure the work we support advances our understanding of IBD and improves the lives of the many Canadians affected by Crohn's disease and ulcerative colitis. Our research investments are grouped into two broad categories: advancing discovery and improving lives.

**Advancing Discovery:** By powering the research discovery process that is driving new treatments and cures we are working to stop Crohn's and colitis.

**Improving Lives:** We aren't just looking to the future, we know that patients need relief from the devastating symptoms of IBD *today*. This is why we are also committed to getting the best care and symptom management into the hands of Crohn's and colitis patients.

Each time Crohn's and Colitis Canada awards funding to promising research we make every effort to ensure it will have maximal impact on the lives of nearly 250,000 Canadians living with IBD. Indeed, we never forget that patients are the ones who should be benefitting from the work we do.

We are excited to share the incredible research we funded in 2015-2016. In the past year, Crohn's and Colitis Canada invested nearly \$6.6 million in leading-edge research supporting 27 research projects, 14 fellowships and studentship training awards, and 3 scientific conferences. This would not be possible without the unwavering support of our researchers, clinicians, donors, partners, sponsors and volunteers. Your commitment to Crohn's and Colitis Canada ensures that Canada remains a global leader in IBD research. On behalf of our entire team, thank you for making our accomplishments possible!

**Together, we will stop Crohn's and colitis. For life.**



A handwritten signature in black ink that reads "Aida Fernandes".

Aida Fernandes, BSc, MBA  
VP, Research & Patient Programs



A handwritten signature in black ink that reads "Mark Silverberg".

Mark Silverberg, MD, PhD  
Chair, Scientific & Medical Advisory Council





8 years ago Crohn's and Colitis Canada was presented with an amazing opportunity to support the GEM project. This large-scale study, led by renowned gastroenterologist Ken Croitoru, recruits family members of individuals diagnosed with Crohn's disease from around the world, trying to ultimately discover the causes or triggers of this devastating illness

### INFECTIOUS *E. COLI*

Dr. Brian Coombes  
McMaster University

Dr. Coombes is investigating how infection caused by *E. coli* is linked to IBD

**\$73,370**  
(Year 2 of 3)

### LEAKY GUTS

Dr. Aleixo Muise  
Hospital for Sick Children

Dr. Muise is investigating how certain genes help control the leakiness of the gut found in IBD

**\$123,820**  
(Year 2 of 3)

## FINDING CAUSES AND TRIGGERS



What causes Crohn's and colitis? What are the triggers that worsen their symptoms? These questions drive our researchers, as they examine environmental triggers and genetic markers responsible for IBD.

### BIOFILM FLARES

Dr. Andre Buret  
University of Calgary

Dr. Buret is studying how a group of microorganisms called biofilms can cause flares in IBD

**\$123,820**  
(Year 2 of 3)

### GENETIC MUTATIONS

Dr. Stephen Girardin  
University of Toronto

Dr. Girardin will study the impact of the most common genetic mutation in IBD, NOD2, on the function of the small intestine

**\$125,000**  
(Year 1 of 3)

### SEQUENCING THE FUTURE

Dr. Mark Lathrop  
McGill University

Dr. Lathrop is using high-tech sequencing to uncover new genetic factors that put people at risk of developing IBD

**\$123,820**  
(Year 2 of 3)

### MUCUS

Dr. Kris Chadee  
University of Calgary

Dr. Chadee is studying the role of MUC2 mucin in maintaining a healthy microbiome

**\$123,820**  
(Year 2 of 3)

### TIGHT GUTS

Dr. Simon Hirota  
University of Calgary

Dr. Hirota is looking at how the protein PXR keeps the lining of the gut tight and protects against inflammation

**\$123,590**  
(Year 2 of 3)

### TRANSPLANTATION

Dr. Derek McKay  
University of Calgary

Dr. McKay is using cells with anti-inflammatory qualities as a personalized approach to treating IBD

**\$125,000**  
(Year 2 of 3)

### INFLAMMATION BE GONE

Dr. Theodore Steiner  
University of  
British Columbia

Dr. Steiner is developing a better approach to dampen unwanted inflammation by using T-regulatory cells

**\$123,391**  
(Year 3 of 3)

### KILL THAT BACTERIA

Dr. Laura Sly  
University of British Columbia

Dr. Sly is studying macrophages, a type of cell found in blood, thought of as "bacteria killers"

**\$125,000**  
(Year 3 of 3)

### CELL DEATH

Dr. Wallace MacNaughton  
University of Calgary

Dr. MacNaughton is studying how the protein PAR2 regulates the death of the cells which turn off inflammation

**\$123,820**  
(Year 2 of 3)

### REGULATING INFLAMMATION

Dr. Jean-Eric Ghia  
University of Manitoba

Dr. Ghia will study the role of Semaphorin in regulating intestinal inflammation

**\$124,998**  
(Year 1 of 3)

### IMMUNE BALANCES

Dr. Bruce Vallance  
BC Children's Hospital

Dr. Vallance is trying to better understand how the immune system balances inflammation with tissue protection

**\$125,000**  
(Year 3 of 3)



**FECAL TRANSPLANT**

Dr. Michael Surette  
McMaster University

Dr. Surette is trying to determine the mechanisms by which fecal transplantation works

**\$108,000**  
(Year 2 of 3)

**PROBIOTIC PREVENTERS**

Dr. Elena Verdu  
McMaster University

Dr. Verdu is studying how the probiotic, *Bifidobacterium breve*, can prevent flares in colitis mice

**\$107,500**  
(Year 3 of 3)

**DISCOVERING NOVEL TREATMENTS**



Figuring out how to block inflammation and create healthy gut ecosystems is at the forefront of this research.

**BACTERIA TRAP**

Dr. Eytan Wine  
University of Alberta

Dr. Wine will be using new technologies to locate and 'trap' bacteria that are recognized by the patients' own immune system

**\$15,000**  
(Year 1 of 3)

**VITAMIN D**

Dr. Nicola Jones  
Hospital for Sick Children

Dr. Jones will study how vitamin D may influence IBD

**\$125,000**  
(Year 2 of 3)

### KID CARE

Dr. Eric Benchimol  
Children's Hospital of  
Eastern Ontario

Dr. Benchimol and his colleagues are looking into how clinical care is being provided to children with IBD across the country

**\$123,187**  
(Year 3 of 3)

**Dr. Benchimol is the recipient of the 2015 Rising Star Award, which recognizes an outstanding investigator in the early stages of their career**

### GUT BACTERIA

Dr. Pere Santamaria  
University of Calgary

Dr. Santamaria will test whether white blood cells treated with nanoparticles will blunt the progression of IBD

**\$50,000**  
(1 Year)

### PROBIOTICS

Dr. Deanna Gibson  
University of  
British Columbia

Dr. Gibson is looking at ways of improving probiotic therapy

**\$50,000**  
(1 Year)

### TRANSITIONS

Dr. Tracie Risling  
University of Saskatchewan

Dr. Risling is gathering data to support the development of an assessment tool to measure the transition readiness and needs of adolescents with IBD

**\$13,857**  
(1 Year)

## GETTING THE BEST CARE



It's so important to ensure that people affected by Crohn's and colitis get the best treatments. These grants are looking to create evidence-based health service models to ensure the best patient care.

**Dr. Brian Feagan is the recipient of the 2015 Leadership Award, for excellence in the field of IBD research**

**Dr. Risling is the recipient of the inaugural nursing-led research grant, created to increase opportunities for nurses to conduct IBD research**

### SYSTEMATIC REVIEWS

Dr. Brian Feagan  
Cochrane IBD Group

The Cochrane IBD Group is part of the prestigious Cochrane Group, the world leader in producing systematic reviews of scientific literature. Crohn's and Colitis Canada is partnering with the Cochrane IBD Group to support our mutual interest to provide high-quality information which helps healthcare professionals make well-informed healthcare decisions for IBD patients

**\$171,000**  
(2015-2016)





# PACE

ADVANCING PATIENT CARE BY CROHN'S AND COLITIS CANADA

The Promoting Access and Care through Centres of Excellence (PACE) network represents the largest Canadian collaboration for adults living with Crohn's disease and ulcerative colitis. It unites leading Canadian researchers in order to combine areas of expertise. Together, the centres of excellence can improve patient outcomes and standardize delivery of care for Canadians living with IBD.

## HELPING MANAGE SYMPTOMS



These grants focus on treating complications and predicting the disease course of IBD.

### PAIN

Dr. Dean Tripp  
Queen's University

Dr. Tripp is looking into the psychosocial risk factors of pain and poor quality of life in IBD

**\$87,650**  
(Year 2 of 3)

### MECHANISMS OF PAIN

Dr. Stephen Vanner  
Queen's University

Dr. Vanner is studying the mechanisms of pain in order to guide doctors in developing treatment plans

**\$125,000**  
(Year 3 of 3)

## EDUCATING PROFESSIONALS



We host medical conferences and support IBD nurses because we believe that true expertise requires an understanding of how knowledge is evolving.

### MEETING OF THE MINDS

In November 2015 Crohn's and Colitis Canada hosted its 5<sup>th</sup> annual Canadian Future Directions in IBD Conference

### RESEARCH TOPICS IN GASTROINTESTINAL DISEASE MEETING

During Digestive Diseases Week, we supported the Research Topics in Gastrointestinal Disease Meeting which provided PhD candidates and MD postdoctoral trainees an opportunity to present their research findings and engage in career development

### INAUGURAL CANIBD MEETING

Held jointly with the Meeting of the Minds conference, this meeting brought together IBD nurses from around the country to promote furthering nursing education

## RECRUITING HIGHLY TRAINED PROFESSIONALS

Crohn's and Colitis Canada finances researchers through all stages of their careers. We support the entire spectrum of IBD scholarship from undergraduate students all the way through to seasoned investigators.



Crohn's and Colitis Canada/  
Canadian Institutes of Health  
Research/Canadian Association  
of Gastroenterology  
Fellowships

DR. HONG LAW  
McMaster University

DR. FARHAD PEERANI  
University of Alberta

DR. AZE SUZANNE WILSON  
Western University

DR. JULIA ROCHA  
University of Toronto

DR. MARIA FERNANDO  
University of British Columbia

DR. ELLEN KUENZIG  
Children's Hospital of Eastern Ontario

Crohn's and Colitis  
Canada/Saskatchewan  
Health Research  
Fellowships

WHITNEY DUFF  
University of Saskatchewan

JUAN-NICOLAS PENAS-SANCHEZ  
University of Saskatchewan

AMANDA STARR  
University of Ottawa

Crohn's and Colitis  
Canada/University  
of Ottawa  
Post-Doctoral Trainee



**DR. GEORGIA PERONA-WRIGHT**  
University of British Columbia

**DR. GEOFFREY NGUYEN**  
University of Toronto

Crohn's and Colitis Canada/  
Canadian Institutes of Health  
Research/Canadian Association  
of Gastroenterology  
Salary Awards

**DR. ERIC BENCHIMOL**  
Children's Hospital of Eastern Ontario

**DR. JOHAN VAN LIMBERGEN**  
Dalhousie University

**STEPHANIE BUSSIERES-MARMEN**  
McGill University

Crohn's and Colitis Canada/  
Fonds de recherche  
Sante-Quebec  
(Masters or Doctorate-  
level students)

**STEVEN GOSSLAND**  
University of British Columbia

**RUTH MESGNA**  
University of Manitoba

**AMY PLESSIS**  
University of British Columbia

**NICOLE LI**  
University of Ottawa

Crohn's and Colitis Canada/  
Canadian Association  
of Gastroenterology  
(Undergraduate  
summer studentships)

**JUDIE SHANG**  
University of Calgary

**NATHAN BENSLE**  
University of Calgary



## GOVERNMENT PARTNERSHIPS

In collaboration with the **Canadian Institutes of Health Research (CIHR)** and **Genome Canada**, Crohn's and Colitis Canada has leveraged its funds to support cutting-edge team grants related to critical IBD issues.



### RESEARCHER

Dr. John Esdaile  
University of British Columbia

Preventing complications from inflammatory skin, joint and bowel conditions

### OUR CONTRIBUTION

**\$2,800**  
(Year 2 of 5)

### RESEARCHER

Dr. John Rioux  
Université de Montréal

IBD Genomic Medicine Consortium (iGenoMed): translating genetic discoveries into a personalized approach to treating IBD

### OUR CONTRIBUTION

**\$25,000**  
(Year 3 of 4)

### RESEARCHER

Dr. Bertus Eksteen  
University of Calgary

Targeting chronic inflammation of the gut, liver and joint

### OUR CONTRIBUTION

**\$2,800**  
(Year 2 of 5)

### RESEARCHER

Dr. Mark Swain  
University of Calgary

Brain dysfunction in chronic inflammatory disease

### OUR CONTRIBUTION

**\$2,900**  
(Year 2 of 5)

### RESEARCHER

Dr. John Brumell  
Hospital for Sick Children

NADPH oxidase function in the pathogenesis of pediatric IBD and Juvenile Idiopathic Arthritis

### OUR CONTRIBUTION

**\$2,900**  
(Year 2 of 5)

### RESEARCHER

Dr. Ruth Ann Marrie  
University of Manitoba

Critical illness in IBD, multiple sclerosis and rheumatoid arthritis

### OUR CONTRIBUTION

**\$2,800**  
(Year 2 of 5)

### RESEARCHER

Dr. David Park  
University of Ottawa

Insights into Parkinson's disease, Crohn's disease, and leprosy

### OUR CONTRIBUTION

**\$2,800**  
(Year 2 of 5)

### RESEARCHER

Dr. Alain Stintzi /  
Dr. David Mack  
University of Ottawa

The microbiota at the intestinal mucosa-immune interface: a gateway for personalized health

### OUR CONTRIBUTION

**\$7,500**  
(Year 3 of 4)

### RESEARCHER

Dr. Dana Philpott  
University of Toronto

Linking innate immunity and inflammation to chronic disease

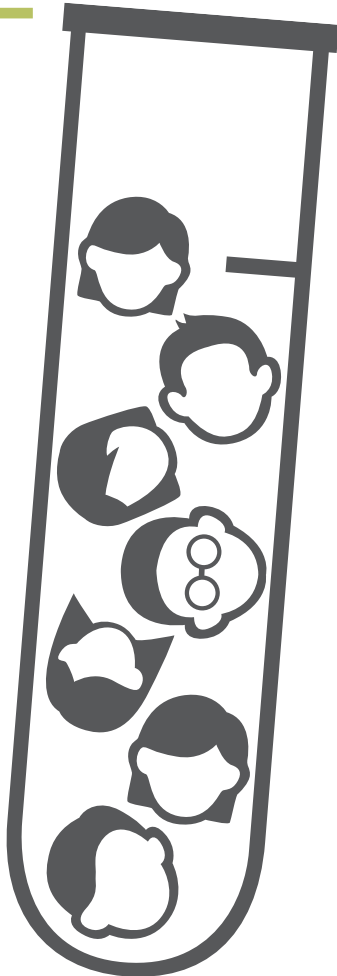
### OUR CONTRIBUTION

**\$2,900**  
(Year 2 of 5)



# \$6,583,829

## Dollars spent on Research



OVER

# 70%

of grants featured  
collaboration between  
leading scientists



For every \$1 we  
invested, \$23  
were leveraged  
from government  
and industry

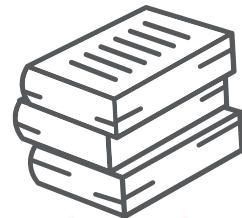
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Hospitals and  
Universities Supported



# 50+

Research Projects  
and Initiatives Funded



# 600+

Articles and book  
chapters published by  
our researchers

Crohn's and Colitis Canada is the only national, volunteer-based charity focused on finding the cures for Crohn's disease and ulcerative colitis and improving the lives of children and adults affected by these diseases. We are one of the top two health charity funders of Crohn's and colitis research in the world, investing over \$100 million in research since 1974, leading to important breakthroughs in genetics, gut microbes, inflammation and cell repair research as well as laying the groundwork for new and better treatments. We are transforming the lives of people affected by Crohn's and colitis (the two main forms of inflammatory bowel disease) through research, patient programs, advocacy, and awareness. Our **Crohn's & Colitis – Make it stop. For life.** campaign has achieved \$44 million (or 44%) at year 3 of the seven year campaign and funds raised are already advancing our mission. Visit [crohnsandcolitis.ca](http://crohnsandcolitis.ca) for more information.

Crohn's and Colitis Canada funds research projects and patient programs that fight inflammatory bowel disease today, while working towards a future free of these diseases. Your donations fuel our efforts.



Follow us:

-  Facebook @crohnsandcolitis.ca
-  Twitter @getgutsycanada
-  YouTube @getgutsy
-  Instagram @crohnsandcolitiscanada

To donate now please call  
1-800-387-1479 or visit

[crohnsandcolitis.ca](http://crohnsandcolitis.ca)

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