

The AllerGen logo features a stylized leaf icon to the left of the word "AllerGen" in a blue serif font.

reAction

January 2018

RESEARCH HIGHLIGHTS

AllerGen investigators contribute to asthma genetics discovery



The world's largest genetic study of asthma has identified five new genes associated with the condition and produced the most comprehensive list of genes and gene locations involved in the development of asthma and allergic disease.

These research results open the door to future studies, improved diagnostics and new treatment options, according to Dr. Denise Daley, the AllerGen investigator who led the Canadian arm of the international collaboration.

"Previously, only 21 genes had been found to be associated with asthma across roughly

20 studies, and they explained only part of the genetic risk for the condition," says Dr. Daley.

"Thanks to this global collaboration, we have brought together data from more than 140,000 individuals of diverse ancestries, allowing us to develop a much fuller picture of how genetics influences asthma across different populations."

The findings were [published](#) in the December 2017 issue of *Nature Genetics*.

[Press release](#)

CHILD Study awarded over \$9M through Genome Canada grant



CHILD Study Director Dr. Padmaja Subbarao with Science Minister Kirsty Duncan at the Ministerial announcement in Toronto on January 23, 2018. Photo: AllerGen NCE Inc.

Genome Canada, in collaboration with other partners, has awarded over \$9 million to a team of top Canadian researchers who will leverage AllerGen's CHILD Study to look for clues to the causes of childhood asthma in the infant gut microbiome.

The researchers will look for a way to predict which babies will go on to have asthma, based on the microorganisms living in their intestines. Knowing this, in turn, may enable the development of strategies to prevent asthma from developing in the first place.

CHILD Study Co-Director Dr. Stuart Turvey (UBC) heads the four-year project. The \$4.5M funding from Genome Canada, combined with contributions from the

Canadian Institutes of Health Research (CIHR) and other partners to total \$9.1M, was announced on January 23, 2018, by federal Science Minister the Honourable Kirsty Duncan.

Dr. Turvey and other members of the project team have previously shown that babies lacking certain microbes in their gut microbiome tend to develop asthma.

They will now use powerful new genomic technologies to analyze stool samples from babies participating in the CHILD Study, to better pinpoint the microbes at play, and to investigate ways of replacing these microbes in the intestines of babies who lack them as a form of preventative treatment.

Continued next page



“This new funding will allow us to use CHILD data to build a catalogue of the gut microbes associated with asthma—particularly the ‘missing’ microbes in infants who later develop asthma—and to develop a screening tool to identify infants at the highest risk of asthma,” says CHILD Study Director Dr. Padmaja Subbarao (Hospital for Sick Children), a co-leader of the Genome Canada grant.

“We are truly delighted to be recognized with this award that will ultimately help us to improve the lives of Canadian children.”

Additional co-leaders on the Genome Canada funded project are Drs Michael Kobor and B. Brett Finlay, both at UBC.

Other members of the research team include: Drs Allan Becker and Meghan Azad (University of Manitoba); Dr. Fiona Brinkman (Simon Fraser University); Prof. Timothy Caulfield and Dr. Pius Mandhane (University of Alberta); Dr. Sara Mostafavi (UBC); Drs Anna Goldenberg and Theo Moraes (SickKids Hospital); Dr. Wendy Lou (University of Toronto); and Dr. Malcolm Sears (McMaster University).

End-users on the project team include: Dr. Louis-Philippe Boulet (Laval), Dr. Judah Denburg (AllerGen NCE), Vanessa Foran (Asthma Canada), Dr. James Mutumba (Commense Inc.), Dr. Ian Rongve (BC Ministry of Health), Janet Sutherland and Dr. Larry Lands (Canadian Thoracic Society), Kate Del Bel (UBC), and Dr. Diana Lefebvre (CHILD Study).

Press release | [Vancouver Sun story](#)



Project team members before their Nov 2017 application interview with Genome Canada: (L to R) Prof. Timothy Caulfield (U Alberta), Dr. Padmaja Subbarao (Hospital for Sick Children), Dr. B. Brett Finlay (UBC), Dr. Catalina Lopez-Correa (Genome BC), Dr. Stuart Turvey (UBC), and Ms. Vanessa Foran (Asthma Canada)



Dr. Stuart Turvey interviewed by the *Vancouver Sun*.



Group photo at the Ministerial announcement in BC, with CHILD project team members Dr. Stuart Turvey (right of the Genome Canada logo) and Dr. Michael Kobor (back row, far right).

C-CARE's anaphylaxis registry finds reactions to food common among children despite adult supervision



“I think we have a false sense of security that as long as our food-allergic child is at home under the supervision of an adult we know, the child will be fine; but apparently, that isn’t the case,” said AllerGen investigator Dr. Moshe Ben-Shoshan in a [CTV News interview](#).

Dr. Ben-Shoshan was commenting on the recent finding that at least a third of reactions in children with food-induced anaphylaxis occur under adult supervision.

Dr. Ben-Shoshan was senior author on the paper, published in the November 2017 issue of [Pediatric Allergy and Immunology](#).

The study found that, among children with food allergies, inadvertent exposures to a known food allergen are frequent and that, in the majority of reactions where the child is being supervised, adults other than the child’s parents are present.

“These findings highlight the importance of increasing education and awareness among all caregivers of food-allergic children,” says Dr. Ben-Shoshan.

The research used data from AllerGen’s nationwide Cross-Canada Anaphylaxis REgistry (C-CARE).

[Press release](#) | [Allergic Living story](#)



[Dr. Ben-Shoshan in the CTV interview](#)

Microbial “signatures” in first 100 days of life may protect against asthma



In a new study analyzing data from a birth cohort based in rural Ecuador, CHILD Study researchers have confirmed their 2015 discovery that early-life gut microbes play a critical role in protecting children against asthma.

The new research, published in the *Journal of Allergy and Clinical Immunology*, reaffirms the importance of a baby’s first 100 days of life, when disruptions in the normal composition of microbes in the gut can affect how the immune system develops.

Drs B. Brett Finlay, Stuart Turvey, and Marie-Claire Arrieta published their original 2015 findings, using CHILD Study data, in *Science Translational Medicine*.

The work demonstrated, for the first time in humans, the vital role gut microbes play during the first three months of life in training the immune system. Specifically, the researchers found that, at the age of three months, infants with low levels of four specific bacteria, called FLVR (*Faecali-*

bacterium, *Lachnospira*, *Veillonella*, and *Rothia*), had a significantly higher risk of asthma, even if their bacteria levels normalized later.

“Our study in Ecuador allowed us to compare the gut microbes of babies living in a tropical non-industrialized country with our findings from the Canadian cohort,” says senior author Dr. Finlay.

“We were interested to find out if the microbial ‘signature’ we observed in Canadian infants at risk for asthma was also present in Ecuadorian babies.”

Although the researchers did not find the same low levels of FLVR bacteria among at-risk infants in Ecuador, they observed other similarities and differences that support the concept of a critical window during which specific gut microbial “signatures” are associated with an increased risk of childhood wheeze and, potentially, asthma.

[Press release](#)



Asthma in infant boys may eventually be preventable



A new study leveraging CHILD Study data shows that the family risk for asthma—typically passed from moms to babies—may not be a result of genetics alone: it may also involve the microbes found in a baby's digestive tract.

AllerGen investigator Dr. Anita Kozyrskyj led the research, which found that Caucasian baby boys born to pregnant moms with asthma—the infants with the highest risk for developing asthma in early childhood—are also one-third as likely to have a gut microbiome with specific characteristics at three to four months of age.

These findings provide the first evidence that maternal asthma during pregnancy may be associated with changes in an infant's gut microbes.

“Our discovery, with more research, could eventually lead to a preventative approach involving modifying the gut microbiome in infants to reduce the risk,” Dr. Kozyrskyj observes.

Press release

CHILD Study paper chosen as *JACI* Editor's choice

A press release issued by *The Journal of Allergy and Clinical Immunology (JACI)* highlights new findings from AllerGen's CHILD Study that will help doctors better predict which children will develop asthma and allergies.

Analyzing data from more than 2,300 children participating in CHILD, the research found that children at one year of age who have eczema or atopic dermatitis (AD) and who are sensitized to an allergen, are seven times more likely than other infants to develop asthma, and significantly more likely to have a food allergy by age three.

It has long been known that infants with eczema or AD are more likely to develop asthma and allergic rhinitis in later childhood, a progression known as “the atopic march.” But predicting precisely which children with AD will go on to develop these conditions has been difficult.

“Over the years, the clinical community has struggled to explain the atopic march,” said Dr. Malcolm Sears, a professor at McMaster University and Founding Director of the CHILD Study. “These findings help us to understand the interactive effects of AD and early allergic sensitization on the risk of asthma and food allergy, and show that, in combination, they pose a significant risk for future allergic disease.”

JACI's December 2017 issue highlighted the article as an “Editor's Choice” feature.

[AllerGen-McMaster press release](#) | *JACI* | [McMaster Daily News](#)

Stress in pregnancy may affect a baby's immune system



Infants born to mothers experiencing psychological distress (stress, depression, anxiety) may be at a higher risk of developing allergic disease, according to new findings published online in [Brain, Behavior and Immunity](#).

The study analyzed data from 403 infants and their mothers participating in AllerGen's CHILD Study.

"Given the emerging research linking the gut microbiome and allergies, we were interested to see if maternal depression, which is not uncommon in our increasingly stressful environment, plays a role in an infant's early life gut immunity," says lead researcher Dr. Anita Kozyrskyj.

"We found that when mothers were distressed during and after pregnancy, their infants were more likely to have reduced concentrations of secretory immunoglobulin A (sIgA), a critical immune antibody, in their gut as compared to infants whose mothers were not distressed."

Because sIgA is passed from moms to infants through breastmilk, the

researchers also examined the impact of breastfeeding on sIgA levels.

"Even with exclusive breastfeeding, infants of mothers with prenatal depression had slightly lower sIgA concentrations," adds AllerGen trainee and first-author Liane Kang.

"Infants of mothers with both pre- and postnatal depression were three times as likely to have reduced fecal sIgA levels, which suggests that maternal distress is associated with infant sIgA levels, independent of breastfeeding."

Data from CHILD will enable continued research in this area, according to the research team.

"Our findings suggest that programs and policies to support the psychosocial wellbeing of mothers during and after pregnancy are important in shaping the immune health of newborns," observes Dr. Kozyrskyj.

[Press release](#)

New genetic clue to peanut allergy



AllerGen researchers have pinpointed a new gene associated with peanut allergy.

The gene, c11orf30/EMSY (or EMSY), is already known to play a role in other allergy-related conditions, such as eczema, asthma, and allergic rhinitis. This study is the first to associate the EMSY gene with food allergy.

Drs Denise Daley (The University of British Columbia) and Ann Clarke (University of Calgary) led the research, and Drs Yuka Asai (Queen's University) and Aida Eslami (The University of British Columbia) were co-first authors on the paper, which was [published](#) in *The Journal of Allergy and Clinical Immunology*.

“Food allergy is the result of both genetic and environmental factors, but there are surprisingly few data regarding the genetic basis of this condition,” says Dr. Daley. “The discovery of this genetic link gives us a fuller picture of the causes of food allergies, and this could eventually help doctors identify children at risk.”

[Press release](#) | [The Sandbox Project story](#) | [Allergic Living story](#)

Breastmilk hormones may help prevent obesity in infants



For years, scientists have attempted to understand the complexities of human milk—what it's made of, how it's produced, and how its unique composition affects an infant's growth and development.

In a [new study](#) published in the *International Journal of Obesity*, CHILD Study researchers have helped to solve this puzzle. Led by Dr. Meghan Azad, the research analyzed breastmilk from 430 women in the CHILD Study, exploring the potential effects on infant body composition of three breastmilk hormones, and the association of maternal characteristics with variations in these hormones.

“We found that breastmilk hormone concentrations were significantly associated with infant body composition during the first year of life,” notes Dr. Azad.

“Our research has helped us to understand the roles that breastmilk adiponectin, leptin and insulin may play in the development and prevention of obesity in early childhood.”

[Press release](#)

Protecting against peanut allergy in children: new findings



Eating peanut while breastfeeding and early peanut introduction may help protect against peanut allergy in children, according to a [new study](#) led by researchers at the Children's Hospital Research Institute of Manitoba (CHRIM) and the University of Manitoba, and published in the *Journal of Allergy and Clinical Immunology*.

"This study is the first to consider maternal peanut consumption while breastfeeding together with the timing of peanut introduction to infants," said AllerGen researcher and study co-author Dr. Meghan Azad.

"Recent studies showing the benefit of early peanut introduction have inspired a reversal of national and international guidelines regarding peanut avoidance, but those studies did not address breastfeeding or maternal peanut consumption. So we were still missing an important piece of the puzzle."

"We hope to use these results as a starting point for more research to better inform guidelines for preventing food allergies in children," said Dr. Tracy Pitt, first author of the study, pediatric allergist at Humber River Hospital and adjunct assistant professor at Queen's University.

The study used data from the Canadian Asthma Primary Prevention Study (CAPPS).

[Press release](#) | [CBC News story](#) | [Food Allergy Canada's Q&A with the researchers](#)



AWARDS & HONOURS

AllerGen researchers recognized for excellence by CSACI

Four AllerGen investigators were recognized with awards by the Canadian Society of Allergy and Clinical Immunology (CSACI) at that organization's 2017 Annual Scientific Meeting.

Dr. Susan Wasserman was named the inaugural recipient of the Milton Gold Memorial Lectureship, "presented to a speaker at the CSACI Annual Scientific Meeting whose lecture exemplifies the role of advocacy in the field of Allergy and Immunology."

Dr. Wasserman is a Professor of Medicine in the Division of Allergy/Clinical Immunology at McMaster University, and President of the Canadian Allergy, Asthma and Immunology Foundation (CAAIF).

Dr. Moshe Ben-Shoshan was awarded the F. Estelle R. Simons Award for Research in recognition of his "exemplary research in the field of Allergy and Immunology."

Dr. Ben-Shoshan is a physician in the division of Allergy/ Immunology at the Montreal Children's Hospital and Assistant Professor of Pediatrics at McGill University.

He leads the AllerGen-supported national anaphylaxis registry C-CARE (Cross-Canada Anaphylaxis REGistry).

Dr. Philippe Bégin received the CSACI Early Career Award for "showing dedication to our specialty through his contribution to the CSACI."

Dr. Bégin was AllerGen's first *Emerging Clinician-Scientist Research Fellow*. He is now a clinician-scientist at the University of Montreal and Sainte-Justine Hospital, and recently established an oral immunotherapy (OIT) clinic in Montreal.

Dr. Edmond Chan was presented the Jerry Dolovich Award for "demonstrating excellence in clinical work, teaching, and research, and serving as a leader and role model in our specialty."

Dr. Chan treats patients at the BC Children's Hospital and conducts research on various clinical aspects of food allergy. He is involved in AllerGen's National Food Allergy Strategy (NFAST) initiative.

Read more on the [CSACI website](#).



Dr. S. Wasserman (McMaster), Dr. M. Ben-Shoshan (McGill), Dr. P. Bégin (McGill), and Dr. E. Chan (UBC). Photos compliments of CSACI.



Dr. B. Brett Finlay inducted into Canadian Medical Hall of Fame, granted UBC Distinguished Researcher Award

AllerGen investigator Dr. B. Brett Finlay (The University of British Columbia) is one of six [2018 inductees to the Canadian Medical Hall of Fame](#).

Laureates of this honour are individuals whose contributions to medicine and the health sciences have led to extraordinary improvements in human health.

Dr. Finlay is being recognized for “extending our understanding of how microbes interact with humans in both health and disease, uncovering their role in asthma, malnutrition and enteric diseases, with implications for prevention, treatment and cure.”



Dr. B. Brett Finlay

In January 2018, Dr. Finlay was also named one of two recipients of the 2017 University of British Columbia (UBC) [Faculty of Medicine Distinguished Researcher Awards](#), acknowledging his accomplished research career, the recognition he has earned from the medical community, and his effective contributions to student educational growth over the previous year.

When presented the award on February 16, 2018, he will deliver a lecture on “The Role of the Microbiome in Health and Disease.”

These honours follow others endowed upon Dr. Finlay in recent years, including induction into the Order of BC (2007) and receipt of the Queen Elizabeth II Diamond Jubilee Medal (2012), the Carnegie Fellowship for Tenure (2012), and the Prix Galien (2014).

Dr. Jeremy Hirota receives New Investigators Grant

AllerGen investigator Dr. Jeremy Hirota has been awarded a three-year New Investigator Research Grant, sponsored by the SickKids Foundation and the Canadian Institutes of Health Research (CIHR) - Institute of Human Development, Child and Youth Health, to help advance the development of a precision medicine tool for patients with cystic fibrosis.

Dr. Hirota's initiative, "The merging of precision medicine and microfluidics for advances in cystic fibrosis management," aims to leverage microfluidic technology to build a tool that will assess which therapy combinations work best for any given patient, using a small tissue or other biological sample from the patient.

"This could lead to the development of other microfluidic devices for precision medicine to be used for other lung diseases—such as asthma and chronic obstructive pulmonary disease," Dr. Hirota observed in a [St. Joseph's Healthcare, Hamilton news story](#).

Dr. Hirota is a respiratory researcher at St. Joseph's Healthcare, Hamilton, and an assistant professor in the Department of Medicine at McMaster University. He is a former AllerGen HQP and was a 2013 Banting Postdoctoral Fellow.

Read the [McMaster University news story](#).



Dr. Hirota in his lab. Photo: Tina Depko/McMaster University.

PEOPLE & PARTNERS

Remembering Michelle Harkness, AllerGen's HQP and Events Manager

Michelle Harkness, AllerGen's Manager, Highly Qualified Personnel (HQP) Training and Events, passed away on August 22, 2017, following a brief illness.

Michelle managed AllerGen's HQP program with passion and an indefatigable commitment to helping students, early-career professionals, research staff, researchers, and AllerGen's partner organizations achieve their goals and reach their full potential.

Michelle became AllerGen's HQP coordinator in 2011 and built the program into a powerful platform for capacity building, skill development, networking and career enhancement. Due to her tireless efforts, AllerGen's HQP program has become a model emulated by other Networks of Centres of Excellence across Canada.



Members of the AllerGen community remember Michelle Harkness at AllerGen's November 2017 Scientific Meeting.

Michelle attended generously to the needs of everyone with whom she worked, touching many lives in many ways.

Michelle's passing represents an enormous loss to AllerGen and all those who knew and loved her. She is greatly missed.

AllerGen has established the Michelle Harkness Mentorship Award in her honour (see p. 23).



Michelle Harkness (centre) receives an Award for Excellence in HQP Support and Mentorship from AllerGen's Managing Director Diana Royce (left) and former ASNPN President Amrit Singh (right) at AllerGen's 2016 Research Conference.

New faces on CHILD administrative team

Autumn brought change to the CHILD Study's administrative ranks. As of early September 2017, CHILD's Manitoba site has a new Research Coordinator and CHILD's Toronto site has a new Leader.

Dr. Theo Moraes is now Site Leader in Toronto, taking over from Dr. Padmaja Subbarao, who held the post since CHILD's commencement until [becoming the Study's Director](#) on July 1, 2017.

Dr. Moraes has been involved with the CHILD Study from its inception in 2008. A clinician-scientist, he is an assistant professor in the Department of Paediatrics at the University of Toronto and Staff Respiriologist at The Hospital for Sick Children—where he also leads a basic science laboratory in the Peter Gilgan Centre for Research and Learning.

"I am very pleased that Theo has agreed to assume leadership of the Toronto site and I look forward to working with him on the Executive team," commented Dr. Subbarao.

At CHILD's Manitoba site, **Phaedra Propp** has taken over as Research Coordinator.

Phaedra began working with the CHILD Study as a research assistant while completing a Psychology degree at the University of Winnipeg.

"I am excited to take on the role, especially at a point of new exploration as CHILD begins to assess its participants as eight-year-olds," says Ms. Propp.

Rishma Chooniedass leaves the coordinator position, which she had filled since CHILD's inception.

"Rishma has been a stalwart team member, and linchpin of CHILD both in Manitoba and across the country," commented Dr. Judah Denburg, AllerGen's Scientific Director. "Her most helpful and expert involvement with investigators, trainees and patients alike, and her terrific sense for facilitation and partnership development, will be missed."



L to R: Dr. Theo Moraes (CHILD's Toronto site), Phaedra Propp and Rishma Chooniedass with friend (CHILD's Manitoba site).

Meet AllerGen's new HQP Coordinator

AllerGen is pleased to welcome Leah Graystone as the Network's Highly Qualified Personnel (HQP) and Events Coordinator. Leah commenced her role in October 2017.

Leah's M.Sc. research focused on the relationship between the legislative environment (Sabrina's Law) and the everyday experience of students with anaphylaxis. She has experience in a range of fields, including public health, education, and business.

Leah was an AllerGen HQP since 2013 and served on the Executive Committee of the AllerGen Students & New Professionals Network (ASNPN) as Events Director from 2014 to 2017.

The AllerGen Administrative Centre team is delighted to welcome Leah into its ranks.



Leah Graystone

Leadership change at Food Allergy Canada

After 14 years of effective leadership, on December 1, 2017, Laurie Harada stepped down as Executive Director of [Food Allergy Canada](#) (FAC)—the national, not-for-profit patient advocacy organization (formerly Anaphylaxis Canada).

"From the internationally groundbreaking Sabrina's Law to instrumental changes in federal food labelling regulations, Ms. Harada has been a tireless advocate on behalf of more than 2.6 million Canadians with food allergies," states a [FAC press release](#). In 2012, Ms. Harada received the Queen's Diamond Jubilee Medal in recognition of her services.

Jennifer Gerdts became the new Executive Director in January 2018. [Read her introductory greeting](#).

FAC is a legacy partner of AllerGen and a collaborator in AllerGen's [National Food Allergy Strategy](#) (NFASt) initiative.



Above: Laurie Harada, outgoing Executive Director. **At right:** Jennifer Gerdts, incoming Executive Director.



Philippe Bégin heads new oral immunotherapy clinic

A new clinic has been established in Montreal's Sainte-Justine hospital, under the leadership of AllerGen investigator Dr. Philippe Bégin, offering oral immunotherapy (OIT) treatments to children with potentially life-threatening food allergies.



Dr. Philippe Bégin

OIT entails feeding allergic individuals small but progressively larger portions of the food to which they are allergic. As Dr. Bégin explains in media interviews about the clinic, among children, in over 70% of those treated, OIT gradually desensitizes their immune systems to the allergen, so they can be exposed without having an allergic reaction. After some five years of OIT, about 50% of those for whom it works retain its benefits, even after the treatment is stopped.

Dr. Bégin has long been an advocate for OIT, which, though offered by private clinics in the US, has been largely unavailable in Canada.

Through a fundraising effort led by a not-for-profit group ([ByeByeAllergies](#)), and with matching funds from the province, the Montreal clinic has been established as a three-year pilot project.

This pilot project aims to improve the quality of life for over 700 patients, to collect data to bolster support for OIT, and to develop protocols and procedures for adoption by other treatment centres.

Dr. Bégin was AllerGen's first *Emerging Clinician-Scientist Research Fellow*. During his fellowship, he worked at Stanford University with Dr. Kari Nadeau, who is internationally recognized for her work on OIT for the treatment of food allergy. Dr. Bégin has since established himself as a clinician-scientist at the University of Montreal and Sainte-Justine Hospital.

[CBC story](#) | [CTV video](#) | [Global News video](#)



Sainte-Justine Hospital and scenes from its OIT clinic

KNOWLEDGE MOBILIZATION

AllerGen goes digital with its 2016-17 Annual Report



AllerGen's inaugural digital Annual Report features dynamic multimedia highlights of 2016-2017 Network research, knowledge mobilization, commercialization, and capacity-building accomplishments and impacts.

- [Hear researchers describe new findings](#) from the CHILD Study and the Clinical Investigator Collaborative
- [Meet an 11-year old Allergy Pals participant](#) and learn how AllerGen-

funded research changed how he copes with food allergies

- [Listen to AllerGen trainees](#) describe their Summer Studentship and International Research Visit experiences

We invite you to read, view and hear about these—and many other—Network achievements over the past year.

[Experience the 2016-2017 Annual Report](#)

New ResearchSKETCH: Saliva contains a novel molecule for measuring stress

A salivary protein called “Calcium-binding protein spermatid-specific 1,” or CABS1, has the potential to be a reliable, accurate marker of stress.

AllerGen HQP Eduardo Reyes-Serratos wants you to know more about this discovery, which emerged from research he participated in with AllerGen investigator Dr. Dean Befus (University of Alberta).

Read all about it in AllerGen’s newest ResearchSKETCH: “Saliva contains a novel molecule for measuring stress.”

AllerGen ResearchSKETCHES translate AllerGen-funded research into simple, accessible clear-language summaries, to enhance dissemination of results to a broad lay audience.



McMaster allergists/ immunologists critique Australian OIT study

In response to a 2017 Australian study published in *The Lancet Child & Adolescent Health* that was largely heralded as a “cure” and “breakthrough” in peanut allergy, AllerGen investigators Drs Manel Jordana and Susan Wasserman, and AllerGen HQP Dr. Derek Chu, issued a written critique of the study’s flaws and refuted claims about its importance.

The critique appeared on AllerGen’s website in August 2017, and was later republished by *Allergic Living* magazine.

The *Lancet* study assessed outcomes in participants four years after they had completed a randomized controlled trial (RCT) comparing a probiotic combined with peanut immunotherapy (PPOIT) versus placebo. The original trial was published in *The Journal of Allergy and Clinical Immunology* in 2015.

The Jordana/Waserman/Chu critique challenged the 2017 study’s design, methodology and conclusions, which limit the scientific validity of its findings, according to the researchers.

Jordana/Waserman/Chu’s critique: **Peanut allergy immunotherapy—what are the facts?** (August 24, 2017)

The Lancet Child & Adolescent Health publication (August 15, 2017)

The Journal of Allergy and Clinical Immunology publication (January 13, 2015)

AllerGen researchers profiled for CIHR 150

In recognition of Canada's 150th anniversary, the Canadian Institutes for Health Research (CIHR) is celebrating health research by sharing the stories of Canadian researchers and patients.

The CIHR website now profiles the work of numerous AllerGen researchers and HQP. Click on the links below to read their profiles.

Dr. Meghan Azad (CHILD Study): [The protective power of breast milk](#)

Dr. Moshe Ben-Shoshan (C-CARE): [A safe way to test if a child is allergic to antibiotics](#)

Ms. Aimée Dubeau (CHILD Study): [My journey as a health researcher: A time for reflection and celebration; Canadian researchers' contribution to world health is something we can all be proud of!](#)

Dr. Michael Kobor (Gene-Environment Interactions): [Exploring the lifelong impact of early-life adversity; The consequences of adversity during childhood can span a lifetime](#)

Dr. Anita Kozyrskyj (CHILD Study): [Celebrating 7 years of SyMBIOTA \(Synergy in Microbiota\) research](#)

Dr. Malcolm Sears (CHILD Study): [A physician's journey into epidemiology – Two countries, two cohorts; Using long-term data to improve asthma treatments](#)

Dr. Teresa To (CHILD Study): [OASIS: A made-in-Ontario asthma monitoring system with big aspirations; A breath of fresh air: The Ontario Asthma Surveillance Information System \(OASIS\) studies the impact of air pollution and climate on disease](#)

Dr. Stuart Turvey (CHILD Study): [Why some kids get asthma and others don't](#)

Dr. Wendy Ungar (AllerGen Investigator): [Championing child-friendly health policies: Giving children a voice; Tough TASK masters: Informing decisions on children's health care services with the best-in-class evidence](#)

[Read all the CIHR 150 stories](#)



CIC-tested biologic poised to become a “game-changing, blockbuster” asthma drug

In 2014, AllerGen’s Clinical Investigator Collaborative (CIC) conducted an early Phase II clinical trial on the injectable biologic drug tezepelumab, developed by MedImmune (the biologics arm of AstraZeneca) and Amgen, and first identified the drug’s significant therapeutic potential. “Now, it’s hitting the big time,” observes CIC Director Dr. Paul O’Byrne.

The CIC’s 2014 findings were [published](#) in *The New England Journal of Medicine* (NEJM), and reported broadly in major media outlets including *The Wall Street Journal* and *Washington Post*.

A follow-on Phase IIb trial of tezepelumab, conducted by Dr. Jonathan Corren of the University of California, Los Angeles, and colleagues, has now confirmed the CIC’s original evaluation and generated further expectations for an asthma treatment with “blockbuster potential.”

“Dramatic results” from this trial were [published](#) online in the NEJM on September 7, 2017, and presented at the European Respiratory Society (ERS) International Congress in Milan on September 12. In a [commentary](#) on the findings, also published in the *NEJM*, Dr. Elisabeth Bel describes the drug as “the broadest and most promising biologic for the treatment of persistent uncontrolled asthma to date,” positioning it as a strong contender in the multibillion-dollar market for severe asthma injections.

Tezepelumab is an antibody that blocks the action of thymic stromal lymphopoietin (TSLP), a protein involved in various allergic diseases including asthma. In this latest trial, the drug was shown to reduce asthma exacerbations in patients with moderate to severe, uncontrolled disease by between 61% and 71%, compared to placebo.

“This is the best example to date of what the CIC can do,” comments Dr. O’Byrne, who jointly led the 2014 trial with CIC Co-Director Dr. Gail Gauvreau.

“These results further validate the accuracy of the CIC’s allergen inhalation challenge model,” adds Dr. Gauvreau, “and its ability to identify early those compounds that merit continued development and those that are likely to fail in larger clinical trials.”

Since 2005, AllerGen’s allergic asthma CIC has completed or undertaken 21 clinical trials, attracting nearly \$24 million in global pharmaceutical and biotechnology investments to Canada.



The **NEW ENGLAND**
JOURNAL of MEDICINE

Tezepelumab in Adults with Uncontrolled Asthma

Jonathan Corren, M.D., Jane R. Parnes, M.D., Langwei Wang, Ph.D., May Mo, M.S., Stephanie L. Rosati, A.P.N., M.S.N., Janet M. Griffiths, Ph.D., and René van der Merwe, M.B., Ch.B.
N Engl J Med 2017; 377:936-946 | September 7, 2017 | DOI: 10.1056/NEJMoa1704064

CHILD breastfeeding findings to inform physician practice



An article in *MD Magazine* will help physicians use CHILD Study research on breastfeeding to provide better patient care.

The article highlights the finding, published in the *Journal of Pediatrics* in November 2017, that direct breastfeeding in the first three months of life appears to provide more protection against childhood asthma than either infant formula or expressed breastmilk.

The researchers analyzed data from 2,534 infants who were classified into four feeding categories at three months of age. At three years of age, the children were assessed for asthma.

The researchers found that asthma risk was lowest among infants who received only direct breastmilk; higher among those receiving some expressed breastmilk or breastmilk and formula; and highest among those exclusively formula-fed.

“Direct breastfeeding seems to be most protective against asthma development, but expressed breast milk still provides benefits compared to infant formula,” said

lead researcher Dr. Meghan Azad in the AllerGen [press release](#).

For its coverage of the study, *MD Magazine* interviewed lead author AllerGen HQP Dr. Annika Klopp and Dr. Azad.

Dr. Azad shared with the magazine her team’s hope that the study will guide “future research on the best ways to store and feed expressed milk, and that it will inform societal policies to protect, promote and support breastfeeding.”

MD Magazine provides physicians with “up-to-date specialty and disease-specific resources designed to help them provide better care to patients.”

[Read the MD Magazine article](#)



Lung Association, HCEO, Nestlé videos highlight CHILD research

In the new video “[Why does breast milk matter?](#)” produced by the Canadian Lung Association, researcher Dr. Meghan Azad discusses her current CHILD-based research into the impact of breastfeeding on child health—and on asthma risk in particular.

In the interview, Dr. Azad elaborates on the three main questions her project is addressing: Can breastfeeding help prevent asthma in children? What is the role of the milk microbiome in this process? And: What can mothers do to optimize the composition of their milk microbiome and maximize the health benefits of breastfeeding for their children?

Along the way, Dr. Azad describes the CHILD Study, from which her research leverages data and biological samples.

Dr. Azad’s research is supported by a Canadian Lung Association [Emerging Research Leaders Initiative \(ERLI\) award](#), co-funded by AllerGen, the Canadian Respiratory Research Network, and other partners.



Another recent video interview with Dr. Azad, “[Meghan Azad on Studying Chronic Diseases in Children](#),” produced by the Human Capital and Economic Opportunity (HCEO) Global Working Group, explores her work on the developmental origins of disease in children more broadly. It touches on the factors of maternal and infant nutrition, including breastfeeding, and the role of the infant gut microbiome.

In the video, Dr. Azad underlines the value of longitudinal studies in general and of the CHILD Study in particular.

In a third recent online video, “[Antibiotics Early in Life Alter Colonization and Predispose to Obesity](#),” produced by the Nestlé Nutrition Institute, Dr. Azad speaks about another area of her work that has been informed by CHILD research: the impact of early-life exposure to antibiotics on the gut microbiome, and associated health outcomes—especially predisposition to obesity.



HQP NEWS

New Michelle Harkness Mentorship Award to be launched in 2018

The Michelle Harkness Mentorship Award has been created by AllerGen to honour the memory of Michelle Harkness, Manager of AllerGen's Highly Qualified Personnel (HQP) Training and Events Program, 2011 to 2017.

In commemoration of Michelle's dedication to encouraging, inspiring and empowering trainees to reach their full potential, this award will recognize and support trainees, researchers and partners who demonstrate a significant commitment to capacity building and career enhancement through mentorship.

The inaugural Call for Applications for the award will be made in 2018.

To date, donors have generously contributed over \$22,000 to support this award—contributions that AllerGen will match 1-to-1. AllerGen and the Harkness family hope to reach a fundraising goal of \$25,000 by March 31, 2018.

Among the donors, members of the Executive Committee of the AllerGen Students and New Professionals Network (ASNP) gave generously on behalf of their ASNP colleagues.

“Michelle dedicated her career to the advancement of others. This award will help keep her legacy alive and elevate the next generation of science trainees,” comments ASNP President Laura Feldman.

“Michelle was a ‘science mom’ to so many AllerGen students and new professionals. We miss her every day and we aim to honour her memory however we can. I invite anyone who knew Michelle or who shares her passion for training and mentorship to consider donating to the Michelle Harkness Mentorship Award.”

[Make a donation](#) | [More information](#)

**“In memoriam for Michelle Harkness,
and her legacy of nurturing and
facilitating the training and success of
promising young researchers and
leaders across Canada”**

— donor statement

AllerGen 2018 Undergraduate Summer Studentships

NOW OPEN: CALL FOR APPLICATIONS

Deadline: Friday, February 16, 2018

These awards are intended to foster interest in allergic and related immune disease research among students at the undergraduate level of study.

To be eligible, applicants must be Canadian citizens or permanent residents enrolled in a full-time undergraduate degree program in Canada; must have completed one year of undergraduate study; must secure 1:1 matching funding; and must work with an AllerGen investigator on a project aligned with AllerGen’s mission and goals.

Ten studentships of \$3,500 each will be awarded in 2018.

[More information](#) | [Application Form](#) | [2017 Student Video Testimonials](#)

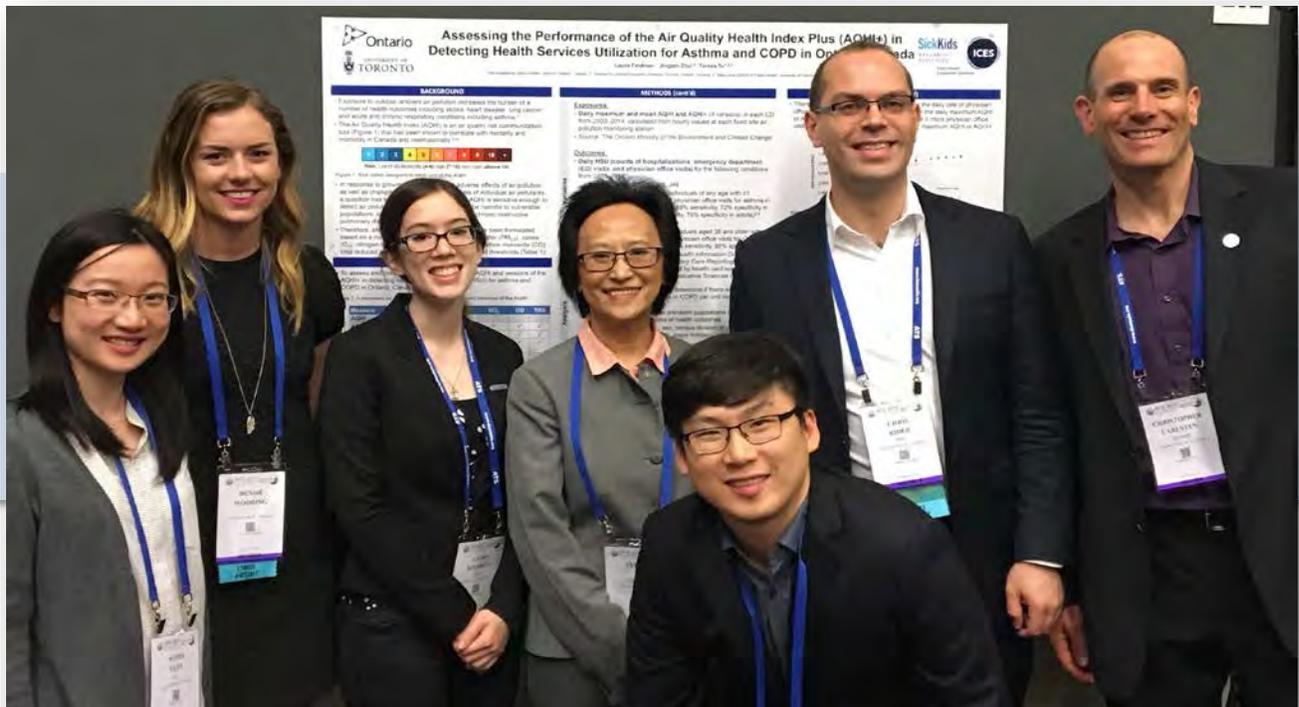


Jin Sheng Zhou

Lara Witt

Denise Wooding

[See student video testimonials](#)



ASPNP President Laura Feldman and her supervisor, Dr. Teresa To, with AllerGen colleagues from UBC’s Carlsen lab at ATS 2017 in Washington, DC. **L to R:** Agnes Yuen, Denise Wooding, Laura Feldman, Dr. Teresa To, Min Hyung Ryu, Dr. Chris Rider and Dr. Christopher Carlsen.

Sarah Svenningsen receives Polanyi Prize

AllerGen trainee Dr. Sarah Svenningsen was awarded the [2017 John Charles Polanyi Prize in Physiology/Medicine](#).

The prize recognizes Dr. Svenningsen's pioneering use of medical imaging technology as a potential treatment tool for asthma.

Using magnetic resonance imaging and sophisticated computer programming, her work may lead to the development of personalized treatment techniques to improve the quality of life for Canada's 2.4-million asthma sufferers.

Dr. Svenningsen is a Post-Doctoral Fellow at [McMaster University](#), where she is working with AllerGen investigator Dr. Parameswaran Nair, and at the Robarts Research Institute of Western University.

She is currently investigating the potential for MRI to improve the delivery of bronchial thermoplasty, a technique used to treat severe asthma.

Her approach would allow for the targeting of treatment to only those parts of the lung that are diseased, reducing the number of treatments required and, consequently, associated costs and patient burden.

The \$20,000 Polanyi Prize, named after the 1986 Nobel laureate in Chemistry, recognizes exceptional work by early-career researchers.



Dr. Sarah Svenningsen.

Upcoming CIHR New/Early Investigator Grants

Pre-announcement:

CIHR Early Career Investigators in Maternal, Reproductive, Child and Youth Health (2018): This funding opportunity will be launched in February, 2018.

[Read more](#)

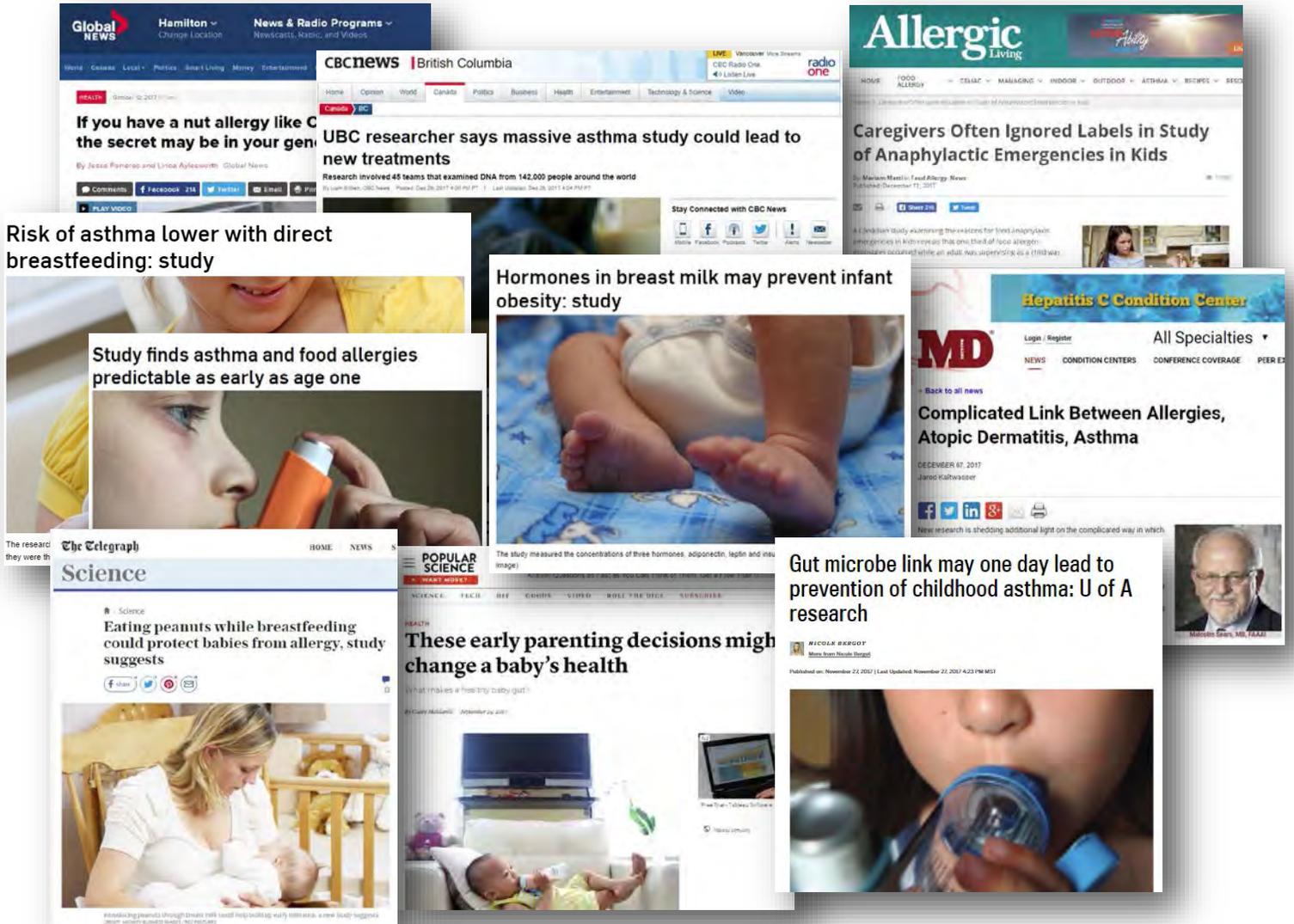
Call open now:

SickKids-CIHR-IHDCYH New Investigator Grants in Child and Youth Health: The maximum amount for a single grant is \$300,000. Application Deadline: April 20, 2018

[Read more](#)

MEDIA

AllerGen Researchers in the News



Dr. Meghan Azad

- *CBC, Metro, CTV, Telegraph, Winnipeg Sun, Nestle Nutrition Institute*

Dr. Denise Daley

- *Vancouver Sun, Metro, CTV, City TV, Global News, Allergic Living, CBC*

Prof. Timothy Caulfield

- *Globe & Mail, CTV, CBC*

Dr. Moshe Ben-Shoshan

- *Allergic Living, CTV*

Dr. Anita Kozyrskyj

- *CNBC, Popular Science, CBC, Edmonton Journal*

Dr. Michael Kobor

- *Miami Herald, Vancouver Sun*

Dr. Malcom Sears, Maxwell Tran

- *Today, CTV, Science Daily, MD Magazine*

EVENTS

CHILD Manitoba celebrates 5-year milestone

On November 4, 2017, over 150 people, including 37 families participating in the CHILD Study, braved a Winnipeg snowstorm to celebrate a Study milestone: the completion of all five-year clinical visits.

Since 2008, CHILD researchers have been following 3,500 children and their families, across four Canadian locations including Manitoba, from pregnancy onward, collecting a vast array of information by questionnaire and through clinical visits with the children at key time-points during their growth and development. These data are enabling an ever-increasing number of [discoveries](#) with implications for clinical practice, lifestyle choices and public policy.

The youngest children in the Study have now turned five and all have completed their fifth-year visits. As the originally planned end-point for the Study, this marks a significant achievement.

“We wanted to hold an event for our CHILD participants to celebrate the end of the five-year assessments and to give them feedback on CHILD study discoveries,” explains the Manitoba Site Research Coordinator, Phaedra Propp.

“We think it is really special that our CHILD families have given so much of their time to the study and we wanted to give something back.”

“These kids are fueling ground-breaking research to improve the health of future generations,” adds Manitoba Site Co-leader Dr. Meghan Azad. “We had a blast celebrating five years with families, partners and researchers.”

The Study has [extended its original research mandate](#) and will continue following its child participants to age eight and beyond.



[See the CTV Winnipeg coverage of the event](#)



AllerGen investigator delivers public webinar on food allergy science

AllerGen investigator Dr. Manel Jordana, Professor of Pathology and Molecular Medicine at McMaster University, is an expert on the immunobiology of allergic diseases and an accomplished science communicator.

On November 2, 2017, Dr. Jordana translated the complexities of food allergy mechanisms into simple, understandable concepts in a free, interactive webinar hosted by AllerGen partner Food Allergy Canada.

[View an archived recording of the webinar.](#)



Dr. Manel Jordana

AllerGen co-hosts food allergy roundtable

In November 2017, AllerGen, jointly with Laval University and Food Allergy Canada, co-hosted a national stakeholder roundtable on guidelines for allergen precautionary labels (*i.e.*, “may contain” statements) as part of its National Food Allergy Strategy (NFASt) initiative.

Over 50 stakeholders, including consumers, clinicians and representatives of Canada’s food regulators and food industry, discussed next steps toward developing improved labelling practices, including the potential use of food allergen thresholds.

Stakeholders shared their perspectives on the challenges involved and discussed strategies to overcome these challenges using an evidence-driven, risk-based approach.

[Read more about the event on the Food Allergy Canada website.](#)



Drs Samuel Godefroy and Susan Waserman

AllerGen's 2017 Scientific Meeting: Planning for the future



On November 12-14, 2017, 59 Network investigators, HQP, staff and invited guests gathered at the Kingbridge Conference Centre north of Toronto to participate in AllerGen's 2017 Scientific Meeting.

In the three-day meeting, AllerGen delegates achieved the following:

- reviewed the progress of AllerGen-supported initiatives, and provided formative feedback supporting their successful completion by 2019;
- ensured AllerGen research platform investments are aligned with AllerGen legacy initiatives;
- strategized new research, knowledge mobilization and commercialization opportunities from 2019-2024 for incorporation into AllerGen's Letter of Intent to participate in the 2019 NCE funding competition; and
- reviewed the process for NCE wind-down in 2019-2021, in the event that AllerGen is not newly funded in 2019.

Special guests at the meeting included Mr. Jean Saint-Vil, Associate Vice-President of

the Networks of Centres of Excellence program; Dr. Philip Sherman (CIHR Director, Institute of Nutrition, Metabolism, and Diabetes); Dr. Sarah De La Rue (CIHR Associate Director, Institute of Human Development, Child & Youth Health); as well as Ms. Karen McIntyre (Director General) and Ms. Barbara Lee (Director, Bureau of Chemical Safety) from Health Canada's Food Directorate.

These guests engaged candidly with conference delegates in a dynamic, information-sharing day that identified areas of potential future research partnership and knowledge exchange.

AllerGen's ninth Research Conference will be held in Toronto, ON in January 2019.



Scenes from the event: Associate Scientific Director Dr. Kelly McNagny (L) and Associate Vice-President of the NCE program Mr. Jean Saint-Vil (R).

inFLAME 7th Annual Workshop: 4-6 April 2018

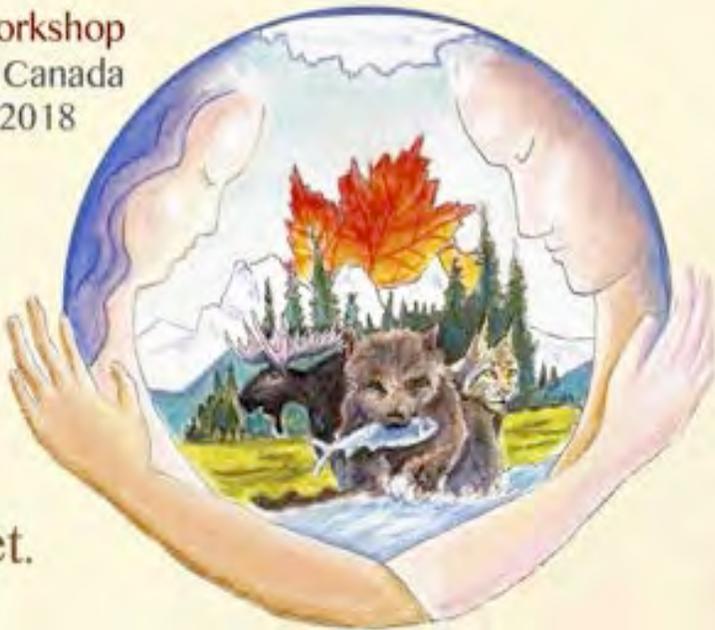


7th Annual Workshop
Canmore, Canada
April 4-6th 2018

Transforming Life

Unifying Personal, Public
and Planetary Health

People. Place. Purpose. Planet.



A message from the organizers

At this critical time in human history, low grade inflammation and immune dysfunction are both a non-communicable disease (NCD) reality and a metaphor for broken systems. In this new era, it is becoming increasingly important to integrate seemingly disconnected areas of research. This is the ongoing mandate of inFLAME.

The 2018 program promises to be the most exciting yet, with new speakers who bring expertise to many exciting, diverse and intersecting topics.

Travel awards have closed but **general abstracts are open until January 30, 2018.**

See you in the Canadian Rockies!

Susan Prescott | Anita Kozyrskij | Dianne Campbell

[MORE INFORMATION](#) | [REGISTER](#)

SAVE THE DATE

for AllerGen's 9th Research Conference



An Impactful Past ~ A Formidable Future

AllerGen's 9th and final Research Conference, *Innovation from Cell to Society*⁹, will be held at the Marriott Downtown Eaton Centre Hotel in Toronto, ON from January 27-30, 2019.

*Innovation from Cell to Society*⁹: *An Impactful Past ~ A Formidable Future* will highlight the discoveries, accomplishments and impacts of AllerGen researchers, Highly Qualified Personnel (HQP), partners and collaborators over the past 14 years, and the latest AllerGen research breakthroughs.

The conference will include keynote addresses by internationally renowned experts:

- **Dr. David Bates** (Professor, Harvard Medical School; Chief, General Internal Medicine & Primary Care, Brigham & Women's Hospital)
- **Professor Timothy Caulfield** (Canada Research Chair in Health Law & Policy; Professor, University of Alberta)
- **Dr. James Gern** (Professor, University of Wisconsin)
- **Dr. Leroy Hood** (President, Institute for Systems Biology)
- **Dr. Sally Wenzel** (Director, University of Pittsburgh Asthma Institute; Professor, University of Pittsburgh)

Send newsletter enquiries and comments to:

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