AllerGen reAction June 2016

# RESEARCH HIGHLIGHTS

## Anaphylaxis cases increasing among children

New findings from AllerGen's Cross-Canada Anaphylaxis REgistry (C-CARE) project, led by Dr. Moshe Ben-Shoshan, reveal that the incidence of anaphylaxis seems to be increasing among children.

Published in the *Journal of Allergy and Clinical Immunology* (JACI), the study shows that the percentage of children's emergency department visits due to anaphylaxis doubled over a four-year period, based on data collected from the Montreal Children's Hospital of the McGill University Health Centre.

"With the rising rates of allergies among Canadian children, we were interested in determining if anaphylaxis rates are also increasing," says Dr. Ben-Shoshan. "Our findings suggest a worrisome increase in anaphylaxis rates that is consistent with the world-wide reported increase."

Funded by AllerGen, C-CARE was launched in 2010 and has since been collecting data from thousands of adults and children treated for anaphylactic reactions.

"The registry has already helped us to identify which foods are the most common anaphylactic triggers for children and adults, the annual incidence of recurrent anaphylaxis in children, and the frequency of accidental exposure to known allergens," says Dr. Ben-Shoshan.

**Read the press release.**

# Breakthrough CHILD Study findings

## *Diet soft drinks during pregnancy affect infant BMI*

Results based on data from AllerGen's Canadian Healthy Infant Longitudinal Development (CHILD) Study and published in *JAMA Pediatrics* show that pregnant mothers' intake of artificially sweetened drinks may increase their babies' risk of obesity. Though previously suggested by some animal research, this is the first evidence of such a correlation in humans.

The researchers analyzed the dietary information collected by the CHILD Study from women during their second or third trimester of pregnancy, and compared it to their infants' body mass index (BMI) data.

They found that daily consumption of artificially-sweetened beverages by mothers was associated with a two-fold higher risk of overweight in their infants.

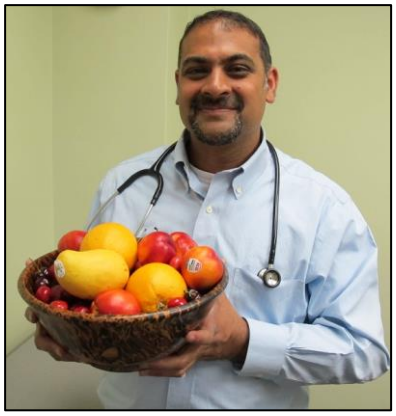
"CHILD provided us with an incredibly rich source of data to examine this important health issue," says lead author Dr. Meghan Azad, a CHILD Study associate investigator and Assistant Professor in Pediatrics & Child Health at the University of Manitoba.

"While more research is warranted to confirm our findings," Dr. Azad adds, "we hope that this research will help to inform evidence-based dietary recommendations for pregnant women."

**Read the press release.**

## *Prenatal fruit consumption boosts babies' cognitive development*

Research using data from the CHILD Study has found that children perform better on developmental testing at one year of age if their mothers consume more fruit during pregnancy.



AllerGen investigator Dr. Piush Mandhane, Associate Professor of Pediatrics in the University of Alberta's Faculty of Medicine & Dentistry, and Edmonton site leader of the CHILD Study, is senior author of the paper that details these findings, published in the journal *EbioMedicine*.

"We wanted to know if we could identify what factors affect cognitive development," Dr. Mandhane explains. "We found that one of the biggest predictors of cognitive development was how much fruit moms consumed during pregnancy. The more fruit moms had, the higher their child's cognitive development."

**Read the press release.**

# New insights into the epigenetics of allergen and diesel exhaust

How does exposure to diesel exhaust (DE) and inhaled allergens provoke molecular changes in the lung tissue of allergy-prone individuals?

The University of British Columbia (UBC)-based lab of AllerGen investigator Dr. Christopher Carlsten is helping to answer this question. Two recent studies bring us another step closer to understanding the role of air pollution in the development and progression of allergic respiratory disease, including asthma—facilitating the design of more effective, targeted prevention strategies or interventions.

In April 2016, in collaboration with the lab of AllerGen investigator Dr. Scott Tebbutt (Associate Professor, UBC), an article titled "Controlled diesel exhaust and allergen coexposure modulates microRNA and gene expression in humans: Effects on inflammatory lung markers," was published in *The Journal of Allergy and Clinical Immunology* (JACI).

AllerGen trainee Dr. Chris Rider was the lead author. This article reports on an investigation into the effects of exposure to allergen, to DE, and to both (co-exposure) on microRNA (miRNA), gene expression and inflammatory pathways in the lung.

Fifteen study participants were subjected to a series of exposures, administered on two occasions separated by a four-week interval, including both inhalation of polluted or control air, and direct placement of an allergen into different segments of the lung. Two days after each set of exposures, the researchers extracted samples of the subjects' bronchial epithelial cells to measure changes in their gene and miRNA profiles.

They found that allergen exposure evoked a wide range of significant changes in gene and miRNA profiles measurable at 48 hours, while, in contrast, the effects of DE were more limited. They also found allergen and DE co-exposure appeared to induce unique effects, but these effects were not seen when the data was subjected to a conservative statistical model.

In this study, the researchers concluded that the allergen-induced changes documented by the study are "remarkable and unique," given that most previous studies tend to measure effects only at 24 hours or earlier; that such stringent statistics were applied; and that previous co-exposure studies were focused on the upper (not lower) airway.

Dr. Chris Rider in the environmental exposure booth at the Carlsten lab

For a second JACI study, "Inhalation of diesel exhaust and allergen alters human bronchial epithelium DNA methylation" (May 2016), the Carlsten lab collaborated with the lab of AllerGen investigator Dr. Michael Kobor (Associate Professor, UBC) to investigate how genes are affected by examining the role of DNA methylation in the lung's immune response to allergens and DE.

Following the same protocol as the first study, the researchers found that exposure to either allergen or DE alone, and co-exposure to both, resulted in only minor DNA methylation within a 48-hour period. However, sequential exposures to first one (allergen or DE) and then, four weeks later, to the other, produced a much greater effect.

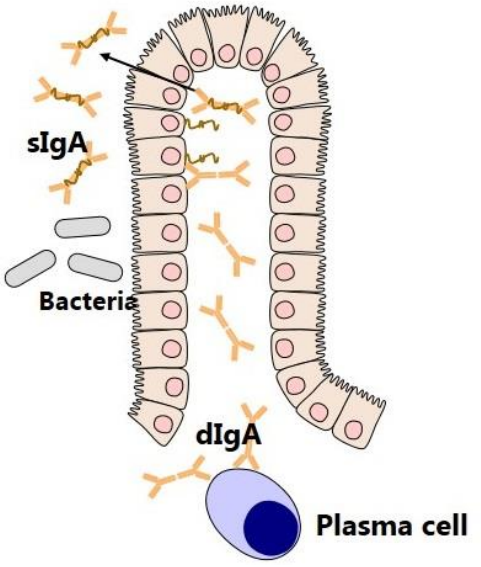
The study also found that effects varied according to the order of the exposures (allergen first or DE first), reflecting the high sensitivity of DNA methylation to differences in short-term exposure. The researchers concluded that "specific exposures appear to prime the lung for changes in DNA methylation induced by a subsequent insult."

Hailed by Dr. Carlsten as "big AllerGen successes," these studies provide further evidence that air pollution and inhaled allergens have significant allergy-relevant effects on cell biology. These insights, in turn, may contribute to improved prevention strategies and treatments for allergic diseases, especially given that current therapies do not control well for exacerbating factors such as air pollution.

# CHILD Study demonstrates link between IgA and *C. difficile* bacteria

A new study from AllerGen's Canadian Healthy Infant Longitudinal Development (CHILD) Study is the first to show an association between early gut immune development and colonization with *Clostridium difficile* (*C. difficile*)—a bacteria known to be a risk factor for future allergic disease.

In a study of 47 infants enrolled in the Vancouver and Winnipeg sites of the CHILD Study, the researchers found that infants with the highest levels of the immunoglobulin A (IgA) antibody were 83% less likely to be colonized with *C. difficile*.




Gut sIgA and microbes train the infant immune system


Dr. Anita Kozyrskyj (L) and Sarah Bridgman (R)

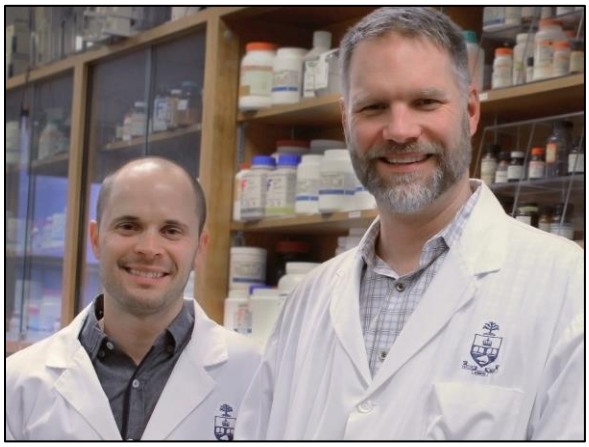
"Colonization of infants with the pathogen C. difficile is on the rise, and over half of the infants (53%) in our study carried the bacteria at three to four months of age," says Sarah Bridgman, an AllerGen HQP and a Masters student at The London School of Hygiene and Tropical Medicine, U.K.

"In this study, we found that high fecal IgA—independent of breastfeeding as a main source of the antibody—was associated with reduced *C. difficile* colonization."

Bridgman is first author on the paper, which was published online in *Microbes and Infection* in May 2016. Quantification of *C. difficile* was conducted at the James Scott laboratory at the University of Toronto by AllerGen HQP Tedd Konya.

In contrast to older children and adults who may develop severe diarrhea and

abdominal symptoms from *C. difficile*, infants are typically asymptomatic to the toxins released by the bacteria. However, early colonization may lead to an increased risk of allergic disease later on.



Tedd Konya (L) and Dr. James Scott (R)

Using questionnaire data collected as part of the CHILD Study, the researchers also examined the impact of breastfeeding, maternal and infant antibiotic exposures, the presence of household pets, vaginal versus cesarean-section delivery, and other early-life factors that may impact fecal IgA levels and colonization by *C. difficile*.

"In our study, *C. difficile* colonization was also reduced in breastfed infants," adds Bridgman.

"*C. difficile* has become a problem, in part because of exposure to antibiotics, which can disrupt the normal gut microbiome," says the study's principal author Dr. Anita Kozyrskyj, a professor at the University of Alberta and a CHILD Study investigator.

"Future research by our group will examine the effects of antibiotics on gut microbiota. Eventually, we believe that the CHILD Study will help us to pinpoint specific associations between IgA as an early life intestinal immune marker, gut microbiota development, and later child health, including allergic disease."

# Impact of bullying on children with food allergy and its influence on wearing medical identification

Does bullying play a role in a child's decision whether or not to wear medical identification jewelry for a food allergy? New Canadian research suggests that it does.

A study of 110 children and teens with food allergy found that 75% did not wear medical identification for various reasons, and 16.3% reported not wearing it due to the fear of being bullied.

The research, published in *Pediatric Child Health* in June 2016, was conducted by Dr. Bahar Torabi (McGill University), Dr. Edmond Chan (The University of British Columbia), Dr. Francesca Cardwell (University of Waterloo) and AllerGen Research Leader Dr. Susan Elliott (University of Waterloo).

"Children with food allergies are at risk for anaphylaxis, and the timing of administration of epinephrine is crucial," says Dr. Torabi, a pediatric allergist, a postdoctoral fellow in the Meakins-Christie Laboratories at McGill University, and the study's first author. "The social stigmatization and fear associated with wearing medical identification may make food-allergic children even more vulnerable."

Using questionnaires administered to teens (13 to 17 years) and parents of children (five to 12 years) seen at the BC Children's Hospital Allergy Clinic in Vancouver, BC, the researchers found that 20% of participants reported being bullied, teased or harassed, and over 77% of those bullied reported it occurred repeatedly. School grounds were the most frequently identified location for bullying (86%).

"Food allergy bullying is preventable," adds senior author Dr. Chan, a pediatric allergist at BC Children's Hospital and Head of the Division of Allergy & Immunology in the Department of Pediatrics of The University of British Columbia.

"We hope that this research will help physicians, parents and teachers to understand how bullying impacts behaviour, and to assist them in developing tools for prevention and management."

Dr. Elliott and Dr. Chan are part of an AllerGen-enabled multidisciplinary stakeholder group working to develop a National Food Allergy Strategy for Canada.

# AWARDS & HONOURS

## Three CHILD Study projects awarded CIHR grants

Three research projects leveraging Canadian Healthy Infant Longitudinal Development (CHILD) Study data have been awarded five-year grants, valued at over $5.6 million, from the Canadian Institutes of Health Research (CIHR).

The funding was announced by the Honourable Jane Philpott, federal Health Minister, as part of a $16 million investment to support new research to combat chronic health conditions.

“This is clear evidence of the value of the CHILD Study as a platform for novel research,” comments CHILD Study Director Dr. Malcolm Sears.

CHILD Study research teams, one led by Dr. Stuart Turvey (The University of British Columbia) and the other by Dr. Padmaja Subbarao (University of Toronto), are behind two of the winning grants.

Dr. Turvey’s team will investigate how a child’s environment interacts with their genome in the development of asthma, while Dr. Subbarao’s will study gene and environment effects on lung health and the risk of developing chronic respiratory disease, asthma and COPD.

A third project, led by Dr. Vern Dolinsky (University of Manitoba), will link to CHILD Study data to identify how environmental exposures during pregnancy are associated with childhood obesity.

Only eight Canadian research teams—of which three were CHILD Study-related—were awarded grants in the competition.

“The CHILD Study, which has its National Coordinating Centre at St. Joseph’s Healthcare in Hamilton—an affiliate of McMaster University—has become an international resource for multiple research endeavours,” says Dr. Judah Denburg, AllerGen’s Scientific Director.

“We are delighted that the Government of Canada, through the CIHR, has invested in the opportunity to leverage CHILD Study data in these ground-breaking research initiatives.”

**Read the press release.**

CHILD Study
HELP CHILDREN GROW UP HEALTHY

# CIC Leader Dr. Parameswaran Nair named Frederick E. Hargreave Teva Innovation Chair in Airway Diseases

Dr. Parameswaran Nair has been named the inaugural recipient of the Frederick E. Hargreave Teva Innovation Chair in Airway Diseases at McMaster University.

Dr. Parameswaran Nair

Dr. Nair is Professor of Medicine in the Division of Respirology at McMaster University, a clinician-researcher at the Firestone Institute for Respiratory Health at St Joseph's Healthcare Hamilton, and head of AllerGen's Severe Asthma CIC (Clinical Investigator Collaborative), where he leads a Canadian-based Phase II clinical trials group evaluating promising new drug molecules for severe asthma.

The Chair was created through a donation from Teva Canada, with matching funds from McMaster's Department of Medicine, to help support research into airway diseases.

Among other criteria for eligibility, the chairholder must contribute in an integral way "towards establishing and maintaining a world-class program in airways diseases research" at McMaster, and must "contribute significantly to the body of scholarship in the area."

The Chair was created in honour of the late Professor Frederick (Freddy) E. Hargreave, who was an accomplished and influential Canadian pioneer in asthma research and patient care. During his long career at McMaster, Dr. Hargreave was a respected mentor to many current leaders in the field, including Dr. Nair.

The late Prof. Frederick E. Hargreave

"It is indeed a privilege for me to occupy this Chair that is named after Freddy," says Dr. Nair. "This Chair allows me to continue his legacy of research in respiratory diseases that directly translates into improving the wellbeing of our patients."

Dr. Nair is also the recipient of the Asthma Society of Canada's (ASC) 2016 Bastable-Potts Research Prize. This year's award, valued at $5,000, recognizes innovative research done by a Canadian researcher that adds to the body of knowledge regarding severe asthma.

The award was presented to Dr. Nair on May 6, 2016, as part of the ASC's *Fighting for Breath* conference.

# Dr. Sonia Anand honoured for health advocacy, international scholarship

AllerGen investigator Dr. Sonia Anand has received two recent honours: one for her excellence as an international scholar, the other for her efficacy as an advocate for women's heart health.

Dr. Anand was one of two professors from the Faculty of Health Sciences named 2016 University Scholars by McMaster University, a recognition of "faculty in mid-career who have already distinguished themselves as international scholars."

In a separate honour, she was also conferred the 2016 Canadian Women's Heart Health Advocacy Award, in the Individual Category, by the University of Ottawa Heart Institute and the Heart and Stroke Foundation. The award recognizes "visionary contributions as an advocate for the heart health of women in Canada, through mobilizing others to increase awareness and take action to reduce women's risk of heart disease."

Dr. Anand's work is dedicated to understanding the genetic and environmental causes of common chronic diseases among diverse cultural groups, women and the socially disadvantaged.

She is a professor of Medicine and Epidemiology and Director of the Population Genomics Program at McMaster University,


**Dr. Anand receives the Women's Heart Health Advocacy Award from Dr. Michele Turek (L) & Mr. David Sculthorpe (R)**

where she holds both the Heart and Stroke Foundation/Michael G. DeGroote Chair in Population Health Research and a Canada Research Chair in Ethnic Diversity and Cardiovascular Disease.

Within AllerGen, Dr. Anand is a co-principal investigator of the CIHR-funded CHILD Study project "Early Life Determinants of Asthma." She is also an investigator in another CIHR-funded project that leverages data from the CHILD Study birth cohort: "Understanding the impact of maternal and infant nutrition on infant/child health in the first 5 years of life."

# Nicole Letourneau a "change agent" for health

Dr. Nicole Letourneau, a researcher within AllerGen's Gene-Environment Interactions, and Patients, Policy and Public Health Enabling Platforms, has been named "one of four Alberta change agents for health " by Alberta Health Services (AHS) and is featured on the cover of the Spring 2016 issue of the AHS consumer magazine, *Apple*.

The "health agent" designation recognizes Dr. Letourneau's research into children's mental health, and her advocacy for the provision of early support to "help prevent problems throughout life, build resiliency and coping skills, and reduce addictions and other harmful influences on health," according to the magazine.

Dr. Letourneau is a professor in the Faculty of Nursing and in the Cumming School of Medicine (Pediatrics & Psychiatry), and holds the *Palix/Alberta Children's Hospital Foundation Chair in Parent-Infant Mental Health* at the University of Calgary. She is also Director of RESOLVE Alberta, a research network concerned with family violence and abuse prevention.


# AllerGen investigator among Manitoba's *Future 40*

Dr. Meghan Azad has been named one of 40 awardees in *CBC Manitoba's Future 40* contest for 2016, which celebrates "Manitoba's new generation of leaders, builders and change-makers under the age of 40." Dr. Azad was selected from among over 140 nominees for her many accomplishments in health research, some of which are noted in her *Future 40* profile.

Dr. Azad is Assistant Professor in the Department of Pediatrics & Child Health and Community Health Sciences at the University of Manitoba and a Research Scientist with the Children's Hospital Research Institute of Manitoba. She is a former trainee and current Investigator in AllerGen, and an Associate Investigator within the CHILD Study.

*CBC Manitoba's Future 40* invites nominations from the public, from which finalists are selected by a panel of judges. This year's winners were honoured at a ceremony held on April 7, 2016, and are profiled on CBC media.

# Dr. Jeremy Hirota receives Innovation & Translational Research Award

AllerGen investigator Dr. Jeremy Hirota, Assistant Professor of Respiratory Medicine at The University of British Columbia and Co-Director of the Chan-Yeung Centre for Occupational and Environmental Disease, was one of seven researchers to receive a 2016 Innovation and Translational Research Award from the Vancouver Coastal Health Research Institute (VCHRI).

The award will support Dr. Hirota's study "Commercialization of a 3D Printed Model of the Respiratory Mucosa for Drug Development Assays." The study aims to develop a 3D printed human airway model that responds to exposures to allergens and air pollution in the same way as a living human lung. If successful, the model could be used to test new asthma and COPD drug candidates.

"A 3D printed human airway with epithelial cells and immune cells will be of value for drug discovery and basic research studying respiratory mucosal immune systems," observes Dr. Hirota.

VCHRI Innovation and Translational Research Awards seek to "support innovative research that will implement research outcomes and turn discoveries into opportunities for better health and improved therapies."

# Prof. Tim Caulfield wins 2015 Science in Society Book Award

AllerGen investigator Professor Timothy Caulfield of the University of Alberta has won the 2015 Science in Society General Book Award for his book *Is Gwyneth Paltrow Wrong About Everything? When Celebrity Culture and Science Clash*.

Prof. Caulfield was "genuinely surprised and thrilled" at the news, tweeting: "I'd love to celebrate this book award with Gwyneth Paltrow over some organic tea!"

"Some of the debunking in this book was supported by the wonderful allergy team at AllerGen," further noted Caulfield, who is a researcher in AllerGen's Patients, Policy and Public Health Enabling Platform.

AllerGen Board Director Dr. Pieter Cullis's book *The Personalized Medicine Revolution: How Diagnosing and Treating Disease are About to Change Forever* was also among the six titles shortlisted for this award.

The award, sponsored by The Canadian Science Writers' Association (CSWA), honours outstanding contributions in science writing. Prof. Caulfield was presented with the award on 4 June 2016, at the CSWA's The Science of Life conference.

# KNOWLEDGE MOBILIZATION

## CanFAST food allergy data drives policy change at Ontario library

Keeping toddlers and preschoolers with food allergies safe in the busy children's spaces of a public library can be daunting. But the success of a recent "food free" pilot program—informed by AllerGen's CanFAST food allergy research—has helped a Markham, Ontario library become a safe, more welcoming space for everyone.

Markham parents Dr. Jyoti Parmar and Mr. Peter Deboran used to make regular family outings to their local library. But when two of their three young children developed food allergies, they began restricting their visits.

"Parents and caregivers feed children while they are playing in the kids' book sections and story-time areas," says Parmar. "Food drops on the floor, is smeared onto the tot tables, and even gets onto the books themselves. As parents of allergic children, we are always vigilant, but it became an enormous challenge to make sure our kids didn't touch or eat the foods that other children were snacking on at the library."

Citing AllerGen CanFAST prevalence data that revealed 7.5% of the population or one in 13 Canadians has a food allergy (Soller *et al.*, 2015), Parmar and Deboran presented to the Library Board in November 2015, to share their experiences and to propose a food and beverage restriction in the children's spaces of the library.

Following their presentation, the Board committed to a four-month pilot (Jan to May 2016) at the Cornell Library Branch to evaluate the effectiveness and impact of a

no-food zone in the children's area. During the pilot, door counts, program attendance, staff feedback, social media comments, and a customer satisfaction survey were evaluated.

On May 30, 2016, the pilot project's findings were presented to the Markham Public Library Board. In a customer satisfaction survey of 102 patrons: 64% felt that the no-food zone was beneficial; 19% maintained that the library should allow food in the children's area; and 17% had no preference. Further, 83% reported that their satisfaction with the library had increased; 82% felt that the children's area was cleaner; and 68% felt safer about bringing their child to the library.

While program attendance decreased 13.2% during the pilot, the report stated that many factors affect program counts and it could not directly correlate the drop with the revised food policy. The overall number of library visits was unchanged compared to the same period from the previous year.

As a result of the pilot's success, the Food and Drink Policy for the Markham Public Library has been amended, and all city branches will adopt the "no-food zone" policy in children's areas.

"We are excited that we can enjoy the library again as a family," says Parmar. "AllerGen's research on the prevalence and impact of food allergies helped us to achieve this important change in our community, which will create a safer and more inclusive environment for the citizens of Markham."


## Inside AllerGen's *Success Stories* (Spring 2016)

This issue highlights the following AllerGen research and capacity building results:

- the discovery that four types of gut bacteria play a key role in protecting children against asthma;
- a landmark study suggesting that infant exposure to air pollution may lead to the development of allergies
- a new device that provides real-time air quality monitoring
- new data on anaphylaxis showing prevalence has doubled among children
- an AllerGen trainee off to a brilliant start as a career scientist investigating the immune system

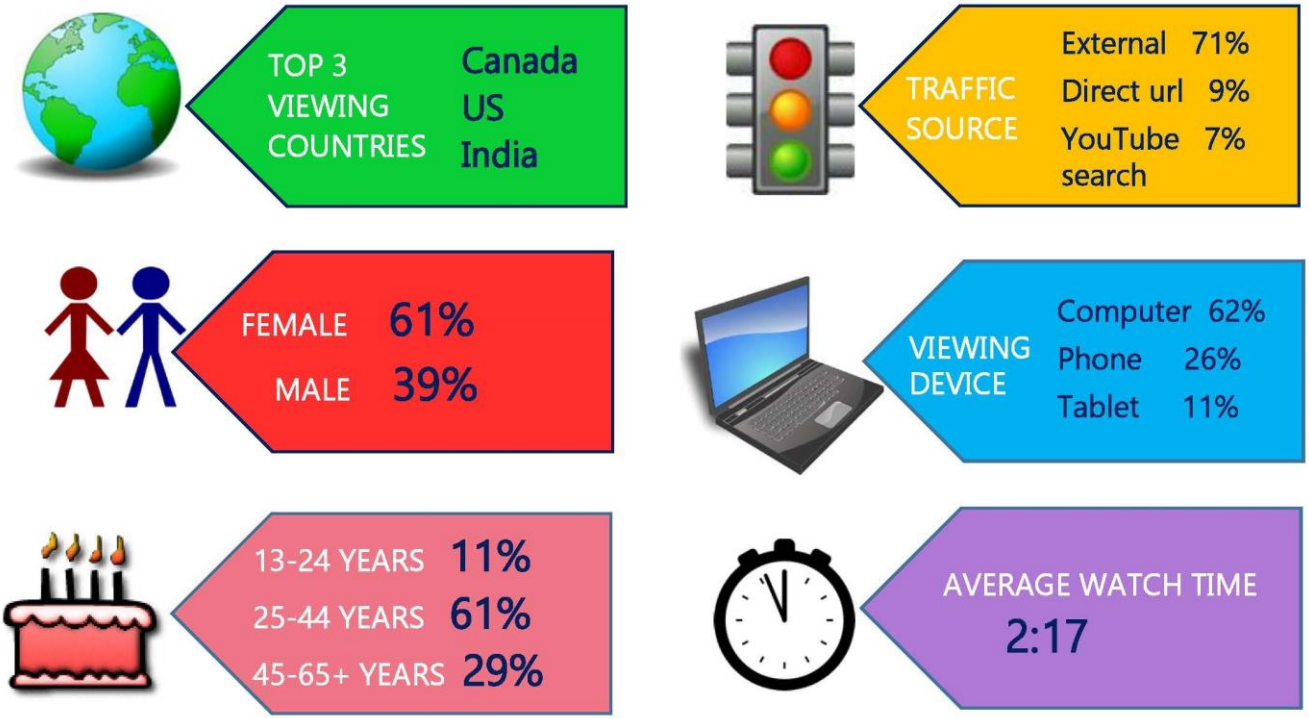
**Read the Spring 2016 issue | Aussi disponible en français**

# Who is watching the CHILD Study video?

Since July 2015, the Canadian Healthy Infant Longitudinal Development (CHILD) Study three-minute whiteboard video has been viewed nearly **4,000** times across **88 countries.**

## YouTube Analytics

(July 2015 – June 2016)



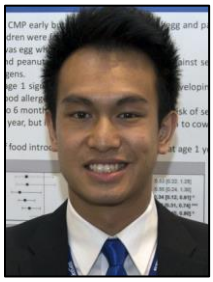

The video is screened at CHILD Study sites in Vancouver, Winnipeg, Edmonton and Toronto, and is available online on AllerGen's YouTube channel.


A five-year-old CHILD Study participant watches the video at the Winnipeg CHILD site

# TRAINEE NEWS

## Two AllerGen trainees awarded ATS Abstract Scholarships

AllerGen trainees Maxwell Tran and Dr. Leila Mostaço-Guidolin were recognized for the outstanding quality of their abstracts at the 2016 conference of the American Thoracic Society (ATS), held May 13–18, 2016, in San Francisco.



**Tran**, a BHSc student at McMaster University, was awarded a 2016 ATS Abstract Scholarship from the Assembly on Allergy, Immunology and Inflammation for his abstract "Effects of Infant Feeding Practices on Food Sensitization in a Canadian Birth Cohort." The abstract presents findings from the CHILD Study, showing that the early introduction of cow's milk, egg white and peanut reduces the risk of food sensitization to these foods by age one.

"This is a significant accomplishment for an undergraduate student," says Dr. Malcolm Sears, Director of the CHILD Study and Tran's supervisor. "This recognition demonstrates that AllerGen trainees have unique opportunities to make significant discoveries using AllerGen research platforms, such as the CHILD Study, accelerating their ability to make scholarly contributions to the global scientific community." The ATS issued a press release about the abstract that generated international media interest, with Tran and the CHILD Study researchers quoted in *The Globe & Mail*, *The Toronto Star* and *Newsweek*, among other media outets.

**Dr. Mostaço-Guidolin**, a postdoctoral researcher at the Heart and Lung Innovation Centre of The University of British Columbia (UBC), was also awarded a 2016 ATS Abstract Scholarship for her abstract "Novel Non-Linear Optical Imaging To Understand The Composition Of Fibrilar Collagen And Elastin In Remodeled Asthmatic Airways." The abstract was selected for oral presentation and took second place in the Canadian Thoracic Society (CTS) Poster Competition, held during the ATS.

"This study is important because the new imaging technique presented by Dr. Mostaço-Guidolin shows, for the first time, the microscale structure of collagen. This is helping us to understand why the airways of patients with asthma become thickened and diseased," comments Dr. Mostaço-Guidolin's supervisor, Dr. Tillie-Louise Hackett, Assistant Professor of Anesthesiology, Pharmacology & Therapeutics and Associate Director of the Centre for Heart Lung Innovation at UBC.

The abstracts were two of 30 selected from among all those submitted by Canadian based trainees for the 6th Annual CTS Poster Competition.

# PEOPLE & PARTNER NEWS

## AllerGen names new Associate Scientific Director

Dr. Kelly McNagny, Professor of Medical Genetics and Co-Director of the Biomedical Research Centre at The University of British Columbia, has been named Associate Scientific Director of AllerGen, effective June 1, 2016, succeeding the inaugural incumbent, Dr. Dean Befus, Professor of Pulmonary Medicine, University of Alberta.

Within AllerGen, Dr. McNagny is Research Co-leader of the Biomarkers and Bioinformatics Enabling Platform.

"As a long-time investigator, research leader, member of the Network's Research Management Committee, and former AllerGen Board member, Dr. McNagny has the deep corporate knowledge and understanding of the NCE program, and of AllerGen's strategic priorities, plans, policies and processes, required for this role," comments AllerGen's Scientific Director Dr. Judah Denburg.

"Kelly also knows NCEs well because of his additional involvement with the highly successful Stem Cell Network," Denburg adds.

"What's more, he is a consummate scientist and natural leader, who always has his 'finger on the pulse' of new technologies."

"I am truly honoured by this appointment," says Dr. McNagny. "The AllerGen network has had a transformational effect on my career; I am only too happy to play a part in its leadership and the achievement of its strategic goals"

The Associate Scientific Director position was created to ensure continuity and minimize disruption in the leadership and management of the Network in exigent circumstances.

# Dr. Pieter Cullis appointed AllerGen Board Chair

On June 1, 2016, Dr. Pieter Cullis began his appointment as AllerGen's fourth Chairman of the Board.

An accomplished scientist and academic entrepreneur, Dr. Cullis is well-qualified to lead AllerGen through the final, culminating years of its NCE mandate, which will focus on implementation and legacy transition.

"I am very enthused at the prospect of the new perspectives and opportunities that Pieter's leadership will enable," says AllerGen Scientific Director Dr. Judah Denburg.

"I am grateful that he has allowed us to harness his expertise and understanding of the complex landscape of personalised medicine for the benefit of the Network.

"His profound knowledge of the life sciences, and concurrent appreciation of the entrepreneurial spirit, will help to ensure that AllerGen continues to transform the Canadian research, training and innovation landscape for those affected by allergic

disease, asthma and anaphylaxis to 2019 and beyond."

Dr. Cullis is Professor of Biochemistry and Molecular Biology, Co-Founder and Chair of the Personalized Medicine Initiative, and Director of the Life Sciences Institute and the NanoMedicines Research Group, all at The University of British Columbia.

He has been a member of the AllerGen Board of Directors since July 2014.

# AllerGen thanks outgoing Board Chair Dr. Howard Bergman


**Dr. Bergman (C) receives a plaque of recognition from Scientific Director Dr. Judah Denburg (L) and Managing Director Dr. Diana Royce (R)**

On June 1, 2016, Dr. Howard Bergman (Chair of Family Medicine and Professor of Family Medicine, Geriatric Medicine and Oncology at McGill University) stepped down as Chair of AllerGen's Board of Directors.

Dr. Bergman was elected to the AllerGen Board of Directors in February 2010 and was appointed as the Board Chair in June 2012, succeeding Mr. Graham Scott.

Dr. Bergman served for four years in this critical leadership role, overseeing the maturation and growth of AllerGen's core projects and programs, and leading the Network successfully through its final NCE funding review in 2015.

"I cannot overstate our gratitude to Howard for his years of service as AllerGen's Board Chair," comments Dr. Judah Denburg, AllerGen's Scientific Director.

"His deep understanding of the intersection of policy and health, his political and academic acumen, and his steady helmsmanship were central factors behind AllerGen's renewal and continued, remarkable growth and achievement during his time as Chair. The Network thanks you, Howard!"

Dr. Bergman's leadership has positioned AllerGen to achieve peak capacity in research and training productivity over the final four years of its mandate, and has guided its legacy investment strategy.

Dr. Bergman will continue to serve as a member of the AllerGen Board until October 25, 2016.

# Dr. Howard Bergman leads celebration of 40 years of Family Medicine at McGill

AllerGen Board member Dr. Howard Bergman, the former AllerGen Board Chair, recently led celebrations to mark the 40th anniversary of the Department of Family Medicine at McGill University.

“When the family medicine program started at McGill University 40 years ago, there was just a handful of medical residents who opted for this field, which was often regarded as less valued than training to become a medical specialist,” says Dr. Bergman, Chair of McGill’s Family Medicine Program.

“Family Medicine is now the biggest department within McGill’s Faculty of Medicine; is involved in the training of medical students, 200 medical residents, and almost 50 MSc and PhD students; and manages over $35 million in research grants, and numerous other activities to deliver primary care across Canada and internationally.”

On May 5, 2016, over 150 people gathered at the Musée des Beaux Arts in Montreal for a homecoming gala to celebrate 40 years of innovation in care, teaching and research.

“The keynote guest was a graduate of our family medicine residency program, who is also an astronaut!” observes Dr. Bergman. A second sold-out event was a policy symposium on primary care featuring speakers from across Canada and England.

Read the McGill University and *Montreal Gazette* articles, which highlight “the dramatic evolution of family medicine at McGill.”

# Changes in AllerGen research leadership

On July 1, 2016, **Dr. Andrew Sandford** concludes his service as Co-Leader of AllerGen’s Gene-Environment (GxE) Interactions Enabling Platform.

Dr. Sandford, a Professor of Medicine at The University of British Columbia (UBC), served as a GxE Research Co-Leader and member of AllerGen’s Research Management Committee (RMC) from July 1, 2010 to June 30, 2016.

AllerGen’s Board of Directors, RMC and Network members thank Dr. Sandford for his leadership and guidance over the past six years and look forward to his ongoing participation as an AllerGen investigator.

On July 1, 2016, **Dr. Michael Kobor** assumes the role of Research Co-Leader of AllerGen’s GxE Enabling Platform and becomes a member of the RMC.

Dr. Kobor is a Canada Research Chair in Social Epigenetics and a Professor in the Department of Medical Genetics at UBC.

In his new role, Dr. Kobor will work alongside Dr. Jeffrey Brook (Senior Scientist, Health Canada and Associate Professor, University of Toronto) to provide leadership and direction to the GxE research portfolio.

On June 1, 2016, two other AllerGen investigators were appointed to the RMC:

- **Dr. Padmaja Subbarao** (Hospital for Sick Children), in her capacity as Deputy Director of the CHILD Study
- **Dr. Gail Gauvreau** (McMaster University), in her capacity as Co-Leader of the Clinical Investigator Collaborative (CIC)

# AllerGen partner launches new anaphylaxis training course


Food Allergy Canada—a community-based advocacy, information, education and research organization, and valued AllerGen partner—has launched a new online training course for parents and caregivers entitled *Anaphylaxis in the Community: What Parents and Others Need to Know.*

Developed with Leap Learning Technologies Inc. and in collaboration with the Canadian Society of Allergy and Clinical Immunology, the new resource is available in English and French.

AllerGen provided research and evaluation support to the development of this learning module, the latest addition to a suite of online educational resources delivered through the "Allergy Aware" portal.

"We are excited to share this resource with the wider community, with a view to reaching more Canadians who can help respond to anaphylactic emergencies," said Laurie Harada, the organization's Executive Director.

"Knowledge about anaphylaxis management will help people minimize the potential for allergic reactions and maximize the public's ability to respond appropriately with treatment."

# Dr. Tia Moffat returns as NCE liaison

In April 2016, Dr. Tia Moffatt, Senior Program Manager at the Networks of Centres of Excellence (NCE) Secretariat, was appointed as AllerGen's NCE liaison. She previously served in this role from 2009 to 2011.

She takes over from Wendy Street, who was AllerGen's NCE liaison since 2014.

Dr. Moffat has extensive experience in research, grant administration and program delivery. She has previously held positions with the Canada Foundation for Innovation and the Stem Cell Network.

# Dr. Richard Leigh assumes clinical & academic leadership roles

AllerGen investigator Dr. Richard Leigh has been appointed as Clinical Department Head for the Calgary Zone of Alberta Health Services, and Academic Department Head of the University of Calgary's Cumming School of Medicine.

Dr. Leigh is a Professor of Medicine and of Physiology and Pharmacology; Division Head, Division of Respiratory Medicine; and GlaxoSmithKline-CIHR Professor of Inflammatory Lung Disease at the University of Calgary. He was the 2012 recipient of the Award of Excellence for Clinical Medicine from the Thoracic Network (Alberta & NWT).

Dr. Leigh's clinical and research interests include the basic mechanisms underlying airway remodeling in asthma, the assessment of airway inflammation, and clinical trials in asthma and COPD.

Within AllerGen, Dr. Leigh is involved in the Clinical Investigator Collaborative (CIC) clinical trials group, contributing his expertise to the evaluation of new drug compounds for the treatment of allergic and severe asthma.

Dr. Leigh's new appointments came into effect on April 16, 2016.

**Read the University of Calgary announcement.**

# MEDIA

## CIHR highlights gut bacteria research in new online feature


Research published by AllerGen investigators Drs. Brett Finlay and Stuart Turvey in September 2015, demonstrated that four specific gut bacteria, present during the first 100 days of life, protect against the development of asthma. The work, funded by the Canadian Institutes for Health Research (CIHR), is now profiled in a new CIHR "Health research in action" profile.

**Read the CIHR story: "Could asthma start with your gut?"**

## AllerGen Researchers in the News

**Dr. Moshe Ben-Shoshan**

- *Allergic Living, RCI, La Presse, Radio Canada, CBC, Metro, Montreal Gazette*

**Dr. Michael Brauer**

- *TIME, National Geographic*

**Dr. Meghan Azad**

- *CBC, La Presse, Irish Times, Vogue, New York Times, Cosmopolitan, TIME, Radio France International, Foreign Affairs, Toronto Star, Global News, Fox News, LA Times, Allergic Living*

**Dr. Piush Mandhane**

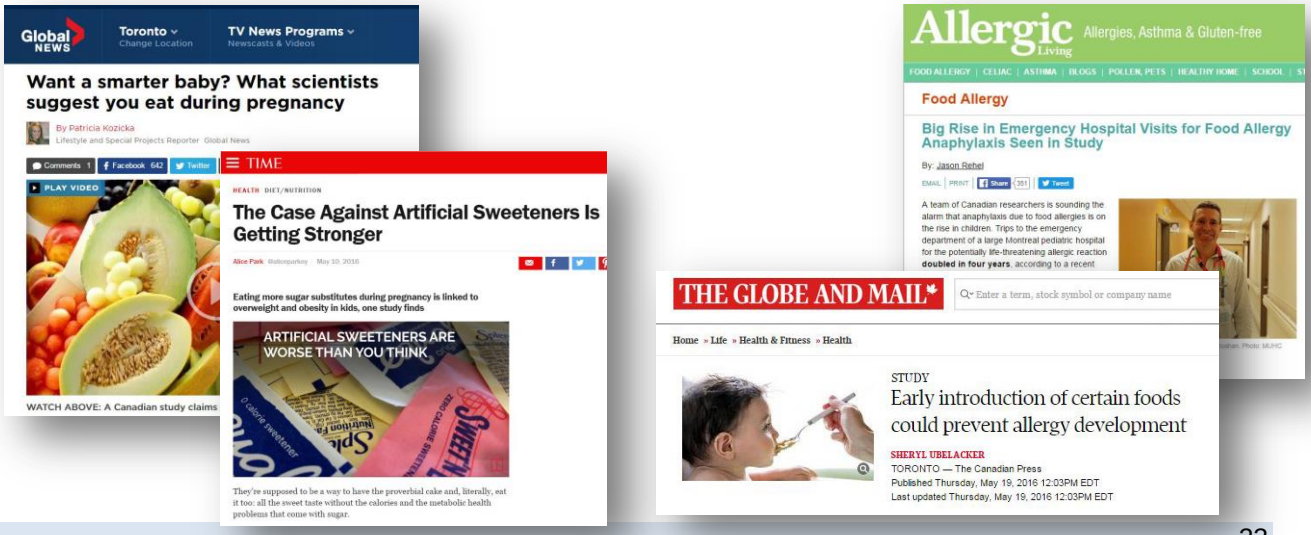
- *Daily Mail, Edmonton Sun, Global News, Telegraph, CTV News*

**Maxwell Tran, Dr. Stuart Turvey**

- *CTV News, City News, National Post, Hamilton Spectator, Globe & Mail, Newsweek, Toronto Star*

**Prof. Timothy Caulfield**

- *CBC, Wall Street Journal, Globe & Mail, Chicago Tribune, Edmonton Journal, Hamilton Spectator, National Post*



# EVENTS

## Connecting and Collaborating in Vancouver: AllerGen's 8th Research Conference

Over 170 delegates gathered in the Fairmont Waterfront Hotel in downtown Vancouver to participate in AllerGen's 8th Research Conference: *Connecting and Collaborating: Globalizing Advances in Allergic Disease Research*, which ran May 29 through June 1, 2016.

This was AllerGen's first conference since the Networks of Centres of Excellence (NCE) program confirmed its funding through to 2019—guaranteeing the Network a full 14 years of support.

The three-and-a-half day program united renowned Canadian and international experts in allergy, asthma, anaphylaxis and related immune disease research, development, commercialization and knowledge mobilization. Attendees spanned researchers and clinician scientists (38%), students and trainees (34%), research staff (15%), as well as NGO/not-for-profit, public sector and industry/private sector representatives (13%).

Conference speakers provided new insights into basic and clinical science and translational research including: the developmental origins and mechanisms of action of allergic disease; new applications for epigenetics; the development of new asthma therapies; scientific advances and strategies for policy change in the area of food allergy; translational research with social impact; and personalized disease prevention and management.

"This was a phenomenal conference, made especially wonderful by the people--the staff, scientists, trainees, clinicians and other members of the community--in attendance."

"There was a good mix of basic science, clinical, and KT research included in both the presentations and poster sessions."

"Thank you for yet another excellent AllerGen conference. Others were commenting on its quality and interdisciplinarity versus other similar meetings"

"Inspiring program…

"An excellent, well-run and fun event."

*"This was an outstanding experience. Not only did I learn a lot through each of the presentations and speakers, I also had chance to network and meet amazing people."*

The conference also highlighted the Network's HQP, with a poster competition (including, for the first time, a Knowledge Translation category) and associated 1-minute oral presentations, an HQP networking dinner and mentoring lunch, and numerous student presenters in the core sessions.

Keynote presentations were delivered by Dr. Susan Prescott (University of Western Australia) on putting the DOHaD paradigm into action for allergies and asthma; Ms. Mary Jane Marsichotto (Food Allergy Research & Education) on FARE's lessons from the trenches of food allergy advocacy; and incoming AllerGen Board Chair Dr. Pieter Cullis (The University of British Columbia) on personalized medicine.

Other guest speakers included Professor Timothy Caulfield who spoke about celebrity "pseudo" science and its influence on our health-related behaviour, and three parents participating in the CHILD Study who shared their experiences as part of this national birth cohort.

These diverse, multidisciplinary discussions facilitated the kind of dialogue and exchange envisioned by the conference objectives: to connect, collaborate and innovate.

Delegate evaluations highlighted the conference's success: 90% of respondents rated their conference experience as Excellent or Above Average, and 92% said they would recommend the conference to others in future.

AllerGen would like to thank the 2016 Program Planning Committee as well as its generous partners and sponsors.

AllerGen's 9th and final Research Conference is being planned for 2019.

# 2016 Conference Snapshots

# AllerGen webinar series concludes on a high note

Dr. Antoine Hakim, who revolutionized the way strokes are assessed and treated in Canada and around the globe, delivered the final installment of AllerGen's inaugural capacity-building webinar series on April 13, 2016. Dr. Hakim is Professor Emeritus of Neurology at the University of Ottawa, Officer of the Order of Canada and a member of the Canadian Medical Hall of Fame.

In a highly interactive session, Dr. Hakim spoke about how to leverage research evidence to change both public policy and healthcare delivery on a national scale, based on his experience as the former CEO and Scientific Director of the Canadian Stroke Network, funded as an NCE from 1999 to 2014. As head of that NCE, Dr. Hakim championed the *Canadian Stroke Strategy*, which most Canadian provinces have since implemented.

The session's record number of attendees included representatives from AllerGen and other NCEs, Canadian knowledge mobilization experts, and partners from not-for-profit health advocacy organizations.

A video recording of the webinar is available on AllerGen's YouTube channel.

This was the final webinar in AllerGen's 2015-16 "Planning for Research Success" series. Between November 2015 and April 2016, invited experts spoke on a range of challenges faced by researchers seeking to sustain their research endeavours or mobilize their findings. Webinar topics included: attracting investment and partners, identifying and engaging stakeholders, commercializing research outputs, and bringing research evidence to bear on policy.

Visit the series' webpage for more information, including links to recordings of other webinars in the series.

A second AllerGen capacity-building webinar series is in development for 2016-2017.

# CSACI Annual Scientific Meeting

As the primary Canadian gathering for the allergy community, the CSACI Annual Scientific Meeting provides an excellent opportunity for specialists and researchers in the field of allergy, asthma, and clinical immunology to meet and share their knowledge in an atmosphere conducive to medical, scientific and social interaction.

**September 29 to October 2, 2016**
**Westin Hotel**
**Montréal, Québec**

For more information, please contact the CSACI office at info@csaci.ca or 613-986-5869.

AllerGen
Allergy, Genes and Environment Network
Le réseau des allergies, des gènes et de l'environnement

2016 CONCOURS VIDEO PHQ
HQP VIDEO COMPETITION

Competition deadline: 30 June 2016
More information

**Send newsletter enquiries and comments to:**
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