



reAction

March 2016

RESEARCH HIGHLIGHTS

Microbiome seeding begins in the womb

When is a baby's microbiome first established? Is it at birth when an infant is exposed to its mother's microbes and the environment? Or is it even earlier?

A review paper by AllerGen researchers summarizes the growing evidence that human microbial colonization begins during pregnancy, and highlights the role of intrauterine microbes in shaping the fetal immune system.

The paper, "[Microbial programming of health and disease starts during fetal life](#)," was featured in [TIME magazine online](#) and published as part of a collection of ground-breaking microbiota reviews in [Birth Defects Research Part C: Embryo Today](#).

The paper's senior author, Dr. Anita Kozyrskyj (University of Alberta), an AllerGen investigator and co-investigator for AllerGen's [Canadian Healthy Infant Longitudinal Development \(CHILD\) Study](#), was interviewed by *TIME*.

"This paper examines data that support the theory that the fetal gastrointestinal tract is not as sterile as previously thought, and that

small amounts of bacteria are present in the placenta, amniotic fluid and cord blood," says Dr. Kozyrskyj. "The source of microbes in the fetus is unclear, but it is likely that they gain access to the intrauterine environment from the vagina or through the mother's blood stream, which suggests that a mother's health and diet are important to her infant's microbiome."

The review paper highlights a pilot study that collected data and meconium (first stool) samples from 57 children participating in the Winnipeg site of the CHILD Study. "The pilot study found that 23% of meconium specimens were colonized with bacteria, which supports the notion that seeding of the microbiome begins before birth," notes AllerGen trainee and first author Dr. Koleva.

"Our next steps are to publish findings on how maternal prenatal health in the CHILD Study cohort, such as asthma status, affects microbial composition of meconium as a potential risk factor for future asthma in offspring," adds Dr. Kozyrskyj.

“You’re Totally on Your Own”: Experiences of Food Allergy on a Canadian University Campus

Following the September 2015 death of [Andrea Mariano](#), a first-year Canadian university student, from an anaphylactic reaction, new research explores the experiences and perceptions of food allergic undergraduate students.

AllerGen Researcher Leader [Dr. Susan Elliott](#) and fourth-year student Alexandra Olarnyk, both at the University of Waterloo, conducted the research, which was published in the [Universal Journal of Public Health](#) in January 2016.

Using focus groups, the researchers found that many food-allergic students at the University of Waterloo experience a difficult transition from high school to university, and that social isolation occurs as a result of their food allergy, causing them to engage in risk-taking behaviour.

“Twenty-five percent of the participants in our study suffered an allergic reaction on campus,” says Olarnyk. “The majority of those reactions occurred in the first month of student life and were triggered by food from a residence dining hall.”

Over a third of the study participants described university events or lecture halls that lacked consideration for students with food allergies, causing them to feel isolated and left out, the authors noted.



“In some cases, that feeling of isolation led to risk-taking behaviour, such as ingesting small amounts of a known allergen or enduring symptoms of an allergic reaction without taking medication,” Olarnyk adds.

“Like most Canadian universities and colleges, the University of Waterloo has no formal policy addressing food allergies,” says Dr. Elliott.

“This sets the stage for serious policy implications, and is of concern because the combination of increased vulnerability and higher likelihood of risk-taking behaviours may put university students at an even greater risk for an allergic reaction.”

Early childhood wheezing increases teen asthma risk

“Wheezy” children with a family history of asthma have reduced lung function and increased risk of asthma and other allergic conditions by age 15, according to a new Canadian study in [JAMA Pediatrics](#).

By showing that asthma-associated deficits in lung function are already present at a very young age, the study suggests that interventions to reduce early-life wheezing could have significant long-term health benefits.

The researchers, including AllerGen investigators Drs Meghan Azad, Edmond Chan, Anita Kozyrskyj and Allan Becker, examined the data for 320 children participating in the [Canadian Asthma Primary Prevention Study](#) (CAPPS), following them from before birth until adolescence.

They found that children who wheezed consistently through infancy and early childhood had the worst lung function (9% decrease) and the highest asthma risk (11 times higher than non-wheezers) at 15 years of age.

“Although many treatments exist to manage asthma symptoms, it is a lifelong disease and there is no cure,” observes lead author Dr. Azad. “Prevention is the best approach to reducing the global burden of asthma, and our study provides important new information to inform asthma prevention strategies.”

Read the [press release](#).

Teens and parents: Different preferences on asthma control

A [new study](#) by AllerGen investigators, published in the November 2015 issue of *BMC Pulmonary Medicine*, compared the views of parents of young children with asthma and adolescents with asthma on factors they perceived to be important in asthma control.

“Clinical practice guidelines for asthma place equal weight on achieving various parameters of asthma control, but fail to reflect the fact that parents and children have different preferences with regard to the parameters they feel are important,” says the study’s senior author, [Dr. Wendy Ungar](#), an AllerGen investigator and Senior Scientist in Child Health Evaluative Sciences at The Hospital for Sick Children.

Fifty-two parents of children with asthma and 44 adolescents with asthma were surveyed.

The study revealed that parents had the strongest positive preference (most favourable) for the absence of night-time symptoms of asthma.

Teens demonstrated the strongest positive preference for the absence of physical activity limitations.

“Asthma education and asthma management plans engage both parents and their children, but to be effective they must consider the preferences of both groups,” says Dr. Ungar.



The impact of combined allergen exposure and diesel exhaust

New research from AllerGen investigator [Dr. Christopher Carlsten](#)'s laboratory at The University of British Columbia (UBC) offers insights into the effects of traffic pollution on the lungs.

For a [study](#) published in *Particle and Fibre Toxicology* in January 2016, Dr. Carlsten's team recruited 12 patients allergic to house dust mite, birch and Pacific grasses. Using a novel study design, patients were exposed to diesel exhaust and their known allergen (or a saline control) on one occasion, and exposed to filtered air and their known allergen (or a saline control) on another.

Bronchial biopsies were performed on the participants 48 hours after each co-exposure to measure inflammation in the lower airway.

The researchers found that the subjects' bronchial submucosa contained higher levels of key molecules involved in the initiation of airway inflammation after the diesel-allergen co-exposure, compared to the other exposure combinations.

"Our study design, in contrast to more common single-exposure studies, better recreated the kind of complex, real-world exposures with which allergic people

actually have to contend," comments senior author Dr. Carlsten. The study's lead author is AllerGen Highly Qualified Personnel (HQP) Ali Hosseini.

A separate [study](#) of similar design, published in the November 2015 issue of *Thorax*, highlighted that two hours of exposure to diesel exhaust causes an enhanced allergic response in sensitized individuals, particularly in those who are genetically susceptible.

"Those with a genetic trait associated with deficiency in the response to oxidative stress were particularly prone to the augmented responses to diesel exhaust-allergen co-exposure," says Dr. Carlsten.

"Given that air pollution poses such a pervasive environmental health risk, we hope that—beyond deepening our understanding of biology—our work will also help to inform those concerned with public health and policy."

Dr. Carlsten is an associate professor of Medicine at UBC and [Canada Research Chair in Occupational and Environmental Lung Disease](#).



AWARDS & HONOURS

Dr. Paul O'Byrne named new Dean of McMaster's Faculty of Health Sciences



[Dr. Paul O'Byrne](#), an AllerGen Research Leader, has been named the new Dean and Vice-President of the Faculty of Health Sciences at McMaster University.

Dr. O'Byrne was selected after an international search for a leader with "imagination," "boldness," "impeccable credentials," and "a powerful vision." He will assume the role on July 1, 2016.

Dr. O'Byrne, a respirologist, is Director of the [Firestone Institute for Respiratory Health](#) at St. Joseph's Healthcare in Hamilton, Ontario, and has been Chair of McMaster's Department of Medicine since 2002.

He also leads AllerGen's [Clinical Investigator Collaborative](#) (CIC), a multi-centre Phase II clinical trials consortium enhancing drug discovery for allergic diseases from proof-of-concept to use in patient populations.

Since 2005, AllerGen's CIC has conducted 21 clinical trials for promising new drug molecules for allergic and severe asthma, facilitating development of new therapies both in Canada and internationally.

"Paul O'Byrne is a world-renowned expert in asthma and respiratory diseases, a consummate scholar and statesman, and a prime mover of AllerGen's research, as leader of its Clinical Investigator Collaborative," says Dr. Judah Denburg, Scientific Director of AllerGen, and Professor of Medicine at McMaster University.

"Paul O'Byrne is the ideal person to take on the position of Dean & VP of our research-intensive Faculty. He will follow in the footsteps of Dr. John Kelton in continuing to focus attention and bring much well-deserved recognition to McMaster University as a major national and global contributor to the understanding and management of health and disease."

Dr. O'Byrne is a Fellow of the Royal Society of Canada, and was inducted into the [Canadian Academy of Health Sciences](#)—one of the highest honours for Canadians in the health sciences community—and named a [Distinguished University Professor](#) by McMaster University in 2015.

Read the articles in [McMaster Daily News](#) and the [Hamilton Spectator](#).



KNOWLEDGE MOBILIZATION

CHILD Study video wins first place in CIHR contest

AllerGen's [CHILD Study video](#) has won first place and a \$5000 award in the CIHR's "IHDCYH Talks" video competition.

Based on the criteria "Impact & Relevance", "Accessibility", "Innovation & Creativity", "Video Quality" and "Reach", the competition judges awarded the CHILD video an average score of 4.45/5.

The video also received the highest number of online votes, comprising 10% of the overall score.



The whiteboard video shows how 3,500 children and their families involved in the Canadian Healthy Infant Longitudinal Development (CHILD) Study are helping to change Canada's approach to fighting allergies and asthma.

The "IHDCYH Talks" competition is sponsored by the CIHR Institute for Human Development, Child and Youth Health, and recognizes excellence in videos "that present evidence-based research to a lay audience."

AllerGen wishes to thank all those who voted online in support of the CHILD video.

The CIHR award will be used to create additional videos featuring research results arising from analyses of CHILD Study data.

See the [McMaster News](#) story.

Submissions invited for 2016 HQP Video Competition

Submission deadline: June 30, 2016

This contest challenges members of the [AllerGen Students and New Professionals Network](#) (ASNPN) to create short videos that highlight important findings and the relevance, meaning, and implications of allergic disease research.

Videos must describe allergic disease research in a manner that is understandable, interesting and engaging to a non-scientific audience.

Accepted videos are featured on AllerGen's [YouTube channel](#) and evaluated by a panel of judges and through an online voting process.

Creators of the winning videos receive cash prizes.

More information



PEOPLE & PARTNER NEWS

Dr. Richard Hegele appointed AETOAC Committee Chair



AllerGen is pleased to announce the appointment of **Dr. Richard Hegele** as the new Chair of its **Advanced Education and Training Opportunities Advisory Committee (AETOAC)**.

Dr. Hegele is Vice-Dean, Research and Innovation at the University of Toronto, where he is responsible for oversight of the strategic direction and management of health and biomedical research in the Faculty of Medicine.

Dr. Hegele was a member of the AllerGen Board of Directors from 2012 to 2013.

He has demonstrated a strong commitment to the Network's HQP program, having served as judge and, in 2014, as chair of the judging panel for the AllerGen Trainee **Poster Competition**.

Dr. Hegele was appointed to the position of AETOAC Chair by AllerGen's **Research Management Committee (RMC)** on March 3, 2016.

Thanks to outgoing Chair Dr. Chris Mody for 10 years of AETOAC leadership



Dr. Chris Mody, the outgoing Advanced Education and Training Opportunities Advisory Committee (AETOAC) Chair, stepped down from his committee duties on December 31,

2015, after 10 years of service.

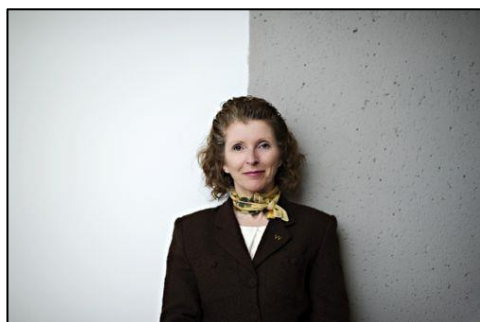
He served on the committee since 2005 and fulfilled the role of Chair since 2008.

On behalf of the AllerGen Board of Directors, Research Management Committee, Network staff, and the many young professionals who have benefitted from his commitment and vision, AllerGen wishes to express its sincere gratitude to Dr. Mody for his significant contributions to AllerGen's **HQP Program** and the development of the next generation of Canadian leaders in the field of allergic disease.



Dr. Susan Elliott appointed to expert advisory panel on food

AllerGen Research Leader Dr. Susan Elliott has been appointed to the [Food Expert Advisory Committee](#) (FEAC) of Health Canada. The FEAC provides Health Canada's [Food Directorate](#) with expert advice on its regulatory and administrative oversight of foods.



In this role, Dr. Elliott and the FEAC will consult on matters related to the safety and nutritional value of food available for sale in Canada.

[Dr. Elliott](#) is a medical geographer and a professor in the Department of Geography and Environmental Management at the University of Waterloo.



She is co-leader of AllerGen's [National Food Allergy Strategy](#) (NFASt) initiative, a multidisciplinary coalition that aims to develop a coordinated national strategy to improve the management of food allergy across environments and settings. She also co-leads AllerGen's [Patients, Policy, and Public Health](#) research platform where she is responsible for identifying opportunities for the translation, mobilization and application of AllerGen research findings into policy and practice.

Dr. Elliott's FEAC appointment was effective January 26, 2016.



MEDIA

Researchers in the News

Dr. Michael Brauer

- *TIME Magazine, BBC, The Independent, The Guardian, Newsweek*

Drs Chris Carlsten and Jeremy Hirota

- *BBC*

Dr. Hind Sbihi

- *Global News, Irish Examiner, Metro News, Times of India*

Dr. Meghan Azad

- *CBC, Metro News, Winnipeg Sun, Allergic Living*

Dr. Darryl Adamko

- *Saskatoon StarPhoenix*

Dr. Brett Finlay

- *CBC*

Dr. Anita Kozyrskyj

- *TIME Magazine*

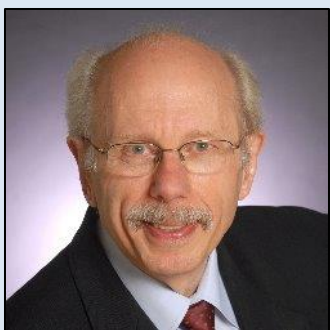
Prof. Timothy Caulfield

- *National Post, LA Times, CBC, Globe & Mail*



EVENTS

Final “Planning for Research Success” webinar to feature former *Canadian Stroke Network* leader



Planning for Policy Impact: Lessons Learned

13 April 2016, 1:00-2:00 PM (EDT)

Dr. Antoine Hakim will divulge the secrets to his success as Scientific Director of the *Canadian Stroke Network*, a Network of Centres of Excellence, from 1999 to 2014.

Canadian Medical Hall of Fame Laureate [Dr. Antoine Hakim](#) will share his first-hand experience in leveraging research evidence to change both public policy and healthcare delivery on a national scale, when he delivers the closing webinar in AllerGen's 2015-16 *Planning for Research Success* series on April 13, 2016.

Learn how, in partnership with researchers, clinicians, healthcare workers, universities, governments and non-profit organizations, Dr. Hakim championed the [Canadian Stroke Strategy](#), an integrated approach to stroke prevention, treatment, and rehabilitation that most Canadian provinces have adopted.

[Register for the webinar](#)

Past webinars available online

Past *Planning for Research Success* webinars can be viewed on AllerGen's [YouTube channel](#).

- **Enhance the Sustainability & Impact of your Research** with Jason Ding
- **Know Your “Customers”** with Jonathon Jafari
- **How to Attract Investment & Partners** with Dr. Brian Underdown

[View the recorded webinars online](#) | [Read more about the series](#)

Planning for Research Success
An AllerGen webinar series

AllerGen network members: Learn from the experts how to better position yourself for success in grant-writing, in partnership and stakeholder relationship building, in attracting investments, and in realizing your R&D and commercialization goals by employing the strategies and discipline of business planning.

Fri, Nov 13, 2015	Enhance the Sustainability & Impact of your Research	Featured speaker: Jason Ding Executive in Residence, TEC Edmonton Presentation time: 1:00 PM (Eastern)
Tue, Dec 1, 2015	Know Your “Customers”	Featured speaker: Jonathon Jafari Senior Director, Business Development, CORD Presentation time: 3:00 PM (Eastern)
Thu, Feb 4, 2016	How to Attract Investment & Partners	Featured speaker: Brian Underdown Managing Director, Lumina Capital Presentation time: 2:00 PM (Eastern)
Thu, Mar 10, 2016	Experiences of a Scientific Entrepreneur	Featured speaker: Pieter Cullis Director, Life Sciences Institute, UBC Presentation time: 2:00 PM (Eastern)
Tue, Apr 13, 2016	Planning for Policy Impact: Lessons Learned	Featured speaker: Antoine Hakim Founding CEO and Scientific Director, Heart and Stroke Foundation Centre for Stroke Recovery Presentation time: 2:00 PM (Eastern)

For details and to register [CLICK HERE](#)

AllerGen



Preliminary program for 2016 Research Conference now available



The preliminary program offers:

- a day-by-day schedule
- lists of sessions, workshops and presenters
- keynote speaker bios
- organizing committee and conference sponsor information

Download it now in PDF

If you have not yet registered for this event, review the preliminary program and **REGISTER NOW**.

Keynote Speakers Confirmed



Dr. Susan Prescott (WUN in-FLAME)

Dr. Pieter Cullis (Personalized Medicine Initiative)

Ms. Mary Jane Marchisotto (Food Allergy Research & Education [FARE])

Don't miss this important post-conference working session



Bioinformatics Workshop

2:00 - 4:00 pm | June 1, 2016

Featured expert: **Dr. Fiona Brinkman**
Simon Fraser University

OPEN TO ALL CONFERENCE DELEGATES



AllerGen Investigators Headline Severe Asthma Conference

Three AllerGen investigators will share their expertise as part of The Asthma Society of Canada's [Severe Asthma Conference: Fighting for Breath 2016](#).

Drs Mark FitzGerald, Parameswaran Nair and Susan Waserman will be featured speakers at the event, which takes place May 6 and 7, 2016, in Toronto, ON.

Other speakers include Dr. Alan Kaplan and Bill Swan, as well as Noah Farber of the Asthma Society and Penny Grant of the [National Asthma Patient Alliance \(NAPA\)](#).

The event aims to gather researchers, clinicians, patients, policymakers and other stakeholders to discuss current research; new and emerging treatment options; the patient experience; and prevention and management issues, including environmental considerations.

The event will conclude with a call to action towards “establishing national, provincial and territorial responses to this debilitating disease.”

[More information](#)





Asthma Society of Canada

FIGHTING FOR BREATH 2016

May 6 & 7, 2016 in Toronto

SPEAKERS

 <small>Bill Swan</small>	 <small>Dr. Alan Kaplan</small>	 <small>Dr. Joel Lexchin</small>	 <small>Dr. Mark FitzGerald</small>
 <small>Dr. Parameswaran Nair</small>	 <small>Dr. Susan Waserman</small>	 <small>Noah Farber</small>	 <small>Penny Grant</small>

Send newsletter enquiries and comments to:
 Kim Wright, Director, Communications and Knowledge Mobilization
 Tel: 905.525.9140 x26641 Email: kimwright@allergen-nce.ca