



*Innovation from cell to society*

2009 . 2010



Networks of Centres of Excellence

AllerGen NCE Inc. is hosted at McMaster University, Hamilton, Ontario, Canada.

AllerGen NCE Inc. is supported by the Government of Canada through the Networks of Centres of Excellence (NCE) Program.

The Networks of Centres of Excellence is a joint program of the Natural Sciences and Engineering Research Council of Canada, the Social Sciences and Humanities Research Council of Canada, the Canadian Institutes of Health Research and Industry Canada.

Launched in 1989 to manage the original Network of Centres of Excellence (NCE), today the NCE Secretariat runs four national initiatives: Networks of Centres of Excellence (NCE); Centres of Excellence for Commercialization and Research (CECRs); Business-Led Networks of Centres of Excellence (BL-NCEs); and Industrial Research and Development Internship program (IRDI).

**AllerGen NCE Inc.**

McMaster University

Michael G. DeGroote Centre for Learning & Discovery

1200 Main Street West, Room 3120

Hamilton, ON L8N 3Z5

Telephone: (905) 525-9140 ext.26502

Fax: (905) 524-0611

E-mail: [info@allergen-nce.ca](mailto:info@allergen-nce.ca)

**[www.allergen-nce.ca](http://www.allergen-nce.ca)**



# Table of Contents

*Aussi disponible en français*

**AllerGen NCE Inc. was established in response to the fact that one in three Canadians** have allergic diseases and that there was a dearth of research available about the causes of and treatments for asthma, allergy and related immune diseases. Since its inception in 2004, AllerGen has been fostering a national network comprising leading Canadian allergy and immune disease experts who are working collaboratively to reduce the morbidity, mortality and socio-economic impacts of allergy, asthma and related immune diseases.

Corporate Profile .....	3
AllerGen's Vision.....	3
AllerGen's Mission .....	3
Message from the Board Chair and Scientific Director.....	4
AllerGen Highlights from 2009-2010.....	7
AllerGen's Integrated Research Programme.....	11
Strategic Research Highlights .....	15
Cross-Programmatic Research Teams and Platforms .....	20
<i>Innovation from Cell to Society</i> <sup>®</sup> – AllerGen's Annual Research Conference.....	24
Network Partners and Collaborators .....	27
Knowledge and Technology Exchange and Exploitation (KTEE).....	31
Tomorrow's Leaders: AllerGen's Highly Qualified Personnel .....	36
Financial Overview .....	43
Network Participants 2009-2010.....	44



2009 . 2010

**AllerGen-funded research  
aims to accelerate the  
development of new  
diagnostic tests, better  
medications and more  
effective public policies.**



## Corporate Profile



**Through the creation of a national network** of allergy and immune disease experts, AllerGen brings together more than 269 investigators and collaborators, 394 students and young professionals and 164 full-time equivalent network research personnel.

AllerGen NCE Inc. (AllerGen), the Allergy, Genes and Environment Network, is a national research network funded by Industry Canada through the Networks of Centres of Excellence (NCE) Program. AllerGen supports excellence in research and fosters social innovation and knowledge translation that will enable Canadians to better prevent, manage and treat allergy, asthma, anaphylaxis and related immune diseases.

Through the creation of a national network of allergy and immune disease experts, AllerGen brings together more than 269 investigators and collaborators, 394 students and young

professionals and 164 full-time equivalent network research personnel. In addition, AllerGen works closely with over 164 partners across different sectors, including academic, industry and government, on 52 research projects.

AllerGen-funded research aims to accelerate the development of new diagnostic tests, better medications and more effective public policies. AllerGen's investments in education and training improve public education, allergy, asthma and anaphylaxis management and increase the number of medical professionals researching and practicing in these areas.

### **AllerGen's Vision**

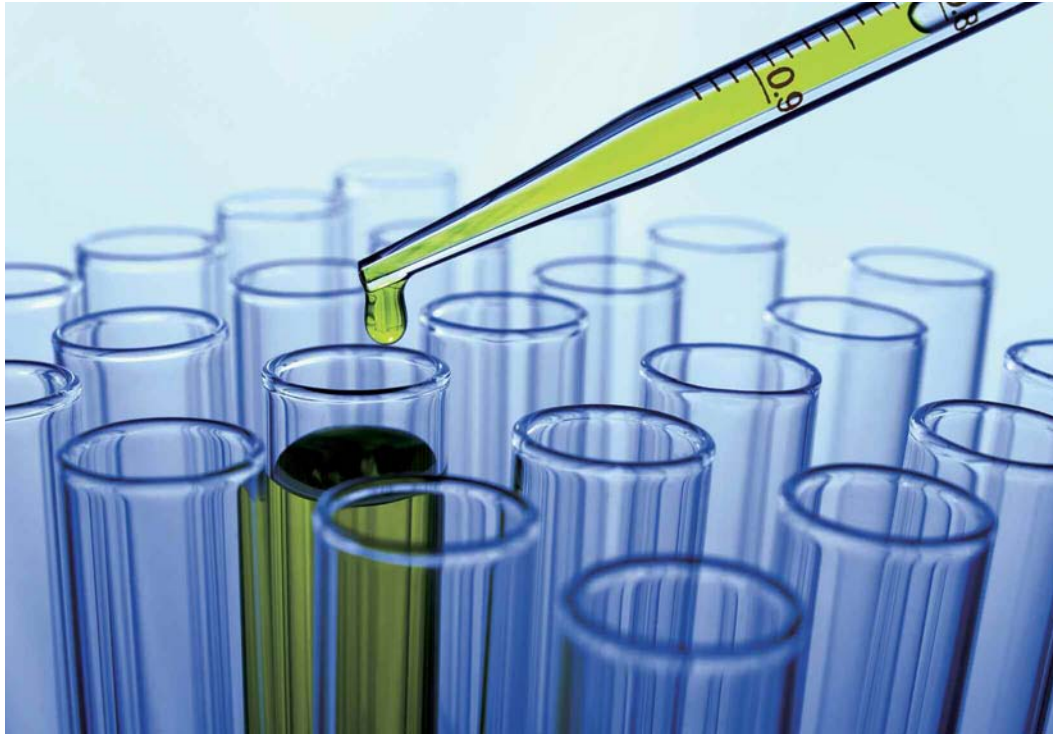
To create an enduring network of allergy and immune disease experts whose discovery and development efforts contribute to reductions in the impact of allergic and related immune diseases nationally and globally.

### **AllerGen's Mission**

To catalyze and support discovery, development, networking, capacity building, commercialization and knowledge translation that contribute to reducing the morbidity, mortality and socio-economic burden of allergic and related immune diseases.



## Message from the Board Chair and Scientific Director



**AllerGen-funded research aims to understand the causes of allergy and asthma,** accelerate the development of new diagnostic tests and better medications, and provide the evidence to support more effective public policies, with the ultimate goal of reducing the burden of these diseases on Canadian society, and improving the lives of those who live with them.

AllerGen NCE Inc. was established in response to the fact that one in three Canadians have allergic diseases and that there was a dearth of research available about the causes of and treatments for asthma, allergy and related immune diseases. Since its inception in 2004, AllerGen has been fostering a national network comprising leading Canadian allergy and immune disease experts who are working collaboratively to reduce the morbidity, mortality and socio-economic impacts of allergy, asthma and related immune diseases. It is with great pleasure that we present our fifth Annual Report for the period April 1, 2009 to March 31, 2010 which outlines the many achievements accomplished within the Network's strategic priority areas over this past year.

AllerGen-funded research aims to understand the causes of allergy and asthma, accelerate the development of new diagnostic tests and better medications, and provide the evidence to support more effective public policies, with the ultimate goal of reducing the burden of these diseases on Canadian society, and improving the lives of those who live with them. In July 2009, AllerGen awarded approximately \$11 million to 20 research teams at 15 hospitals and academic institutions

across Canada investing in multi-disciplinary, networked and partnered programmes of research that aim to better understand, prevent, control or eliminate allergies, asthma, anaphylaxis and related immune diseases.

2009-2010 was a year of continued growth and maturation for AllerGen. Since 2008-2009 the number of AllerGen partners participating in the Network increased by 35%; the number of highly trained professionals, by 26%, the number of publications, by 46%; and, the overall number of allergy and immune disease experts working on AllerGen-funded projects, by 31%.

As a highly integrated, multi-disciplinary and multi-sectoral national research network, AllerGen has established strong ties with international organizations and academic institutions. This has been facilitated through AllerGen's successful implementation of an International Partnership Initiative (IPI) totalling over one million dollars, supported by the NCE Program and by the International Development Research Centre. This past year, AllerGen initiated additional collaborative partnerships aimed at extending its international outreach by developing collaborations with networks of genetic, environmental, allergy and

asthma researchers in Germany, China and Australia.

AllerGen's investments in education and training improve public education, allergy, asthma and anaphylaxis management and increase the number of medical professionals researching and practicing in these areas. AllerGen has also been actively promoting knowledge translation (KT) and knowledge mobilization initiatives that accelerate the sharing of Network research findings with research users across sectors, the general public and other stakeholders.

This year's annual report highlights AllerGen's key achievements from 2009-2010. Our achievements to date position AllerGen as the leader in mobilizing Canadian research, social innovation and knowledge translation that will enable Canadians to better prevent, manage and treat allergy, asthma, anaphylaxis and related immune diseases.

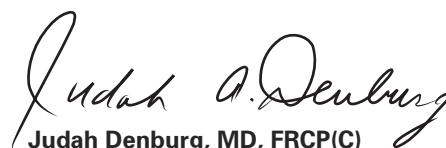
We extend our sincere congratulations and appreciation to the entire AllerGen community for their ongoing commitment and contributions to the Network and in addition, we would like to acknowledge the invaluable contributions of the AllerGen Board of Directors, remembering

particularly Dr. Gloria Jordana, who passed away in an untimely manner on June 5, 2010.



**Graham Scott, C.M., Q.C.**

Chair, Board of Directors



**Judah Denburg, MD, FRCP(C)**

Scientific Director and CEO

2009 . 2010

**AllerGen's investment in Genapha is facilitating the development of novel user interactions with the recently collected genetic data thus enhancing allergy, asthma and related immune disorder research.**





## AllerGen Highlights from 2009-2010



**Dr. Denise Daley and her team of researchers from the University of British Columbia** brought together genetic data from four asthma studies involving 5,565 individuals from Canada and Australia. These individuals were genotyped for 162 asthma candidate genes and related phenotypes. More than 12.3 million genotypes were generated by these four studies.

### **GENAPHA – A Global Resource for Allergy and Asthma Researchers**

Genapha, [www.genapha.ca](http://www.genapha.ca), is an interactive web-site database that supports the world's largest candidate gene study of asthma and allergy. Dr. Denise Daley and her team of researchers from the University of British Columbia brought together genetic data from four asthma studies involving 5,565 individuals from Canada and Australia. These individuals were genotyped for 162 asthma candidate genes and related phenotypes. More than 12.3 million genotypes were generated by these four studies.

AllerGen funding allowed the team to expand the Genapha database from a simple, static repository of information into an interactive, knowledge

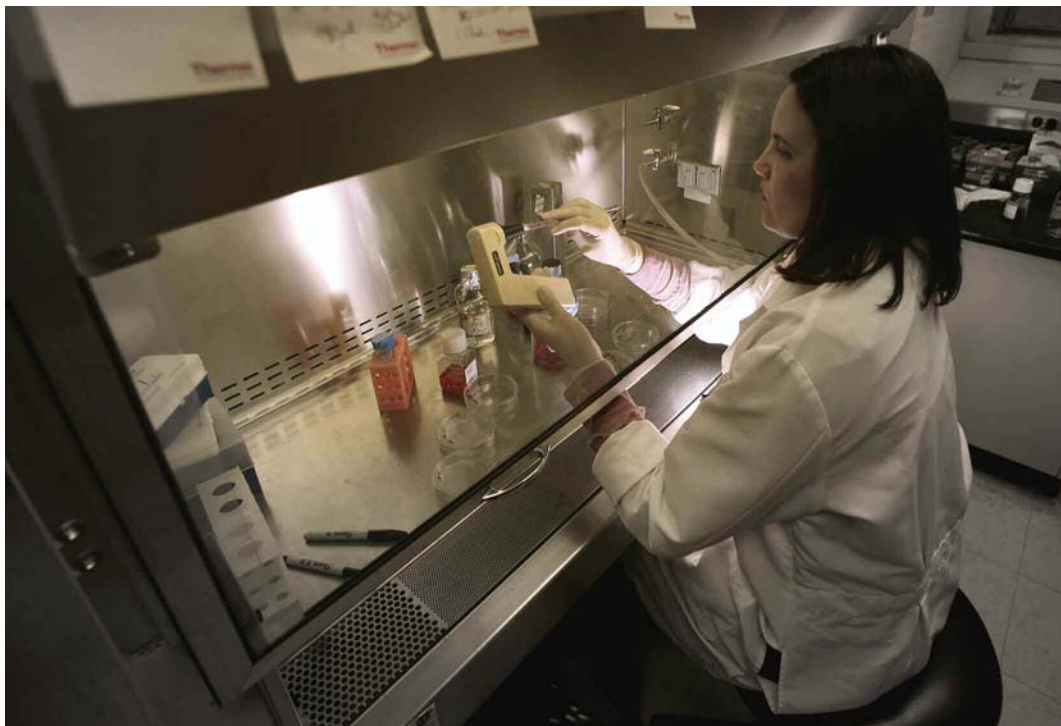
sharing, globally accessible database. Genapha is designed to easily communicate and disseminate knowledge from the database about common complex diseases and engage the public in issues such as the genetics of asthma/allergy, genetic testing and pharmacogenetics. Genapha also allows researchers using animal models or cell cultures access to well organized and phenotyped human populations and cohorts. Tools allow visitors to search the site for information in a variety of different ways, enabling them to utilize the information to develop and test their own hypotheses.

AllerGen's investment in Genapha is facilitating the development of novel user interactions with the recently collected genetic data thus enhancing

allergy, asthma and related immune disorder research.

### **Surveying Canadians to Assess the Prevalence of Common Food Allergies and Attitudes towards Food Labelling and Risk (SCAAALAR)**

The *Surveying Canadians to Assess the Prevalence of Common Food Allergies and Attitudes towards Food Labelling and Risk* (SCAAALAR) Study provides unique insight into the prevalence and determinants of food allergy in Canada. A gap exists between the unexplained increase in food allergy in the Canadian population and the need for enhanced education of all segments of society about food allergy including appropriate policy responses. Drs Ann Clarke (McGill University) and



Susan Elliott (University of Waterloo) utilized AllerGen funding to launch the SCAAALAR study in 2008, to obtain data on the prevalence and determinants of common food allergies and characterize the broader societal response to its apparent increasing frequency. This cross-Canada telephone survey resulted in the first nationwide information about Canadian prevalence of food allergies (to peanut, tree nut, fish, shellfish, and sesame).

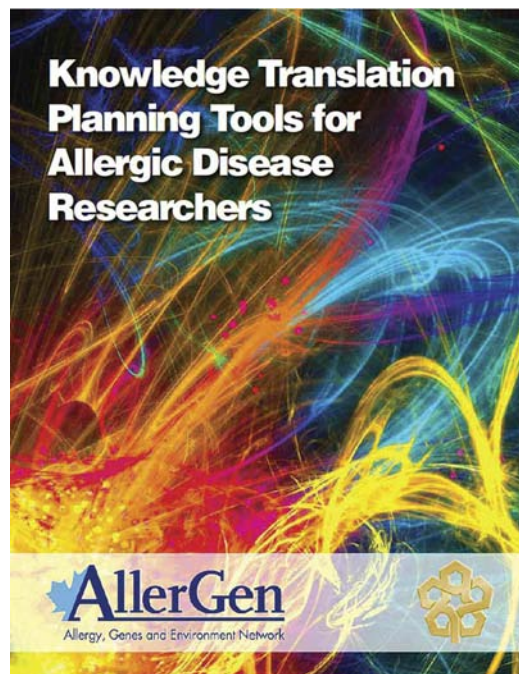
AllerGen researchers concluded that socioeconomic status and birthplace influence food allergy prevalence.

Results from the SCAAALAR Study will be used to:

- 1) Ensure that sufficient health and educational resources are allocated to the prevention, diagnosis and management of allergic diseases in Canada;

- 2) Disseminate guidelines regarding increased use of confirmatory tests and food challenges, contributing to more accurate diagnosis;
- 3) Guide educational institutions in developing policies to prevent and manage anaphylaxis, further contributing to increased safety in the classroom for those students who are allergic; and
- 4) Assist food industries in revising food labels on commercial food products making food labelling more consistent and comprehensible, another contributing factor to ensure the safety of those who suffer from food allergies.

AllerGen funding has been used to help disseminate the results of this study through participation in a variety of research meetings, conferences, workshops and meetings with policy makers. AllerGen's networked approach allowed for the data collected to be translated for use by key policy makers at Health Canada who, in turn, both co-funded the research and employed the data obtained in the policy making process on food labelling. Health Canada continues to be a key partner in the next phase of this study.



### **AllerGen's Knowledge Translation Planning Tools for Allergic Disease Researchers**

Launched in December 2009, the AllerGen *Knowledge Translation Planning Tools for Allergic Disease Researchers* (KT Tool) was developed to assist allergy, asthma and anaphylaxis researchers, research trainees and their collaborating partner organizations to develop a knowledge translation plan for research projects from the onset of their research collaborations.

AllerGen's KT Tool can be applied across disciplines to develop effective knowledge translation plans for research projects, optimizing social and economic research benefits. The KT tool is available on the AllerGen website, [www.allergen-nce.ca](http://www.allergen-nce.ca), and has been distributed in hard copy at its Network-wide research conference, the Ontario Asthma Plan of Action Forum and was the focus of an interactive session on using the tool at an AllerGen trainee capacity building workshop.

### **Online Anaphylaxis Training for Schools Developed**

Recognizing that there are deficiencies in anaphylaxis policy and training provided in elementary and secondary schools, AllerGen supported the development of an e-learning program by Dr. Anthony Levinson, Assistant Professor at McMaster University.

This program of online courses directed at teachers, daycare staff, and restaurant managers and personnel is based on best practices for dealing with anaphylactic individuals. Since school-based training capacity is limited and costly, e-learning is an efficient, cost-effective model for human resource training on how to deal with anaphylaxis in the educational setting.

The program has learning modules dedicated to the following areas:

- Policy and legal issues surrounding anaphylaxis and food allergy;
- Understanding anaphylaxis, including identifying signs and symptoms;
- How to respond to an anaphylactic emergency and using an auto-injector;
- Reducing risk in schools; and
- Providing additional resources and information on anaphylaxis.

Dr. Levinson has built upon his AllerGen-supported project in partnership with the Government of Alberta in order to implement this e-learning program, called the *Alberta Education Pilot Study*. Following an evaluation process, the team will explore opportunities to roll-out customized adaptations of this tool in other jurisdictions and provinces.



2009 . 2010

**AllerGen's goal is to catalyze and support innovative research that contributes to the discovery of the causes of, and ways to prevent, control or eliminate allergic and related immune diseases.**



## AllerGen's Integrated Research Programme

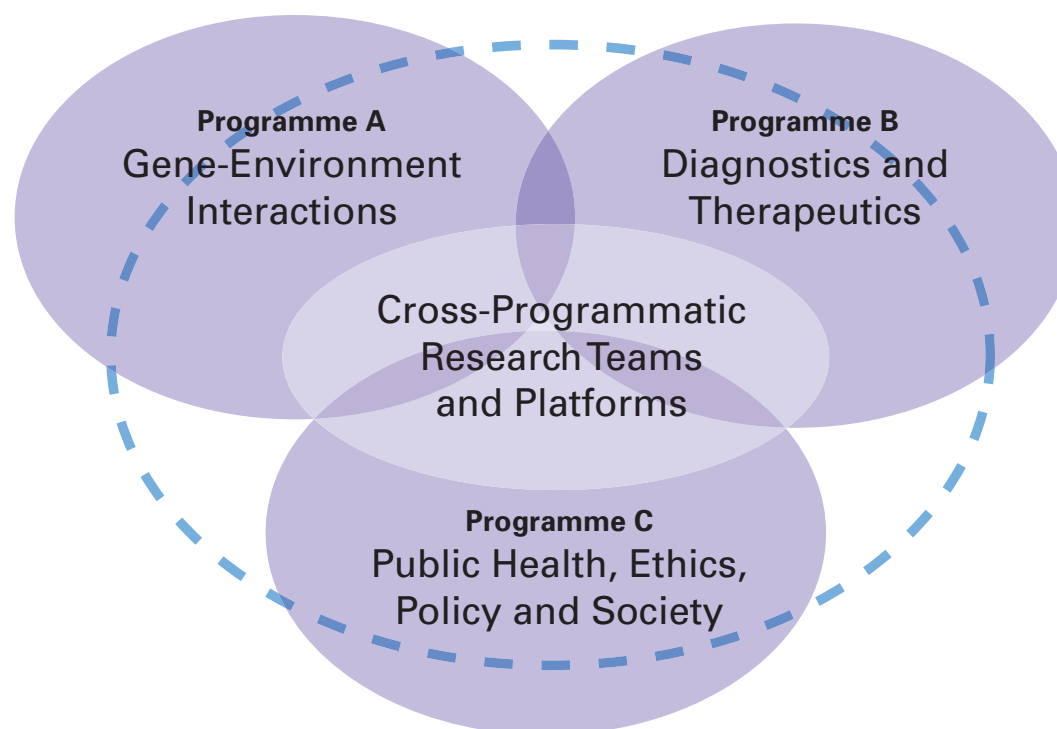


**AllerGen's national network allows for novel collaborations** to take place amongst leading research experts fostering cutting-edge, multi-disciplinary research. AllerGen's integrated research programme is spearheaded by six internationally recognized researchers providing leadership to three cross-cutting research platforms.

Since 2005, AllerGen has supported a broad spectrum of research aimed at radically improving the quality of life for allergy, asthma and related immune disease sufferers.

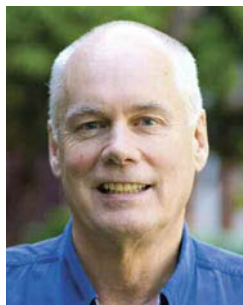
It is AllerGen's goal to catalyze and support innovative research that contributes to the discovery of the causes of, and ways to prevent, control or eliminate allergic and related immune diseases. AllerGen's national network allows for novel collaborations to take place amongst leading research experts fostering cutting-edge, multi-disciplinary research.

AllerGen's integrated research programme is spearheaded by six internationally recognized researchers providing leadership to three cross-cutting research platforms:





Jeffrey Brook, PhD



Peter Paré, MD



Dean Befus, PhD



Paul O'Byrne, MB



Susan Elliott, PhD



Allan Becker, MD

## Programme A

### – Gene-Environment Interactions

#### Programme Leaders:

Jeffrey Brook, PhD, Environment Canada

Peter Paré, MD, University of British Columbia

#### Strategic Focus:

Genetics, environmental exposures and gene-environment interactions in allergy and asthma

AllerGen's *Gene-Environment Interactions* research programme aims to capitalize on the wealth of data concerning early life phenotypes by pooling data across existing cohorts, focusing on genetic polymorphisms in genes related to early life allergic processes and establishing a new Canadian allergy and asthma birth cohort, the Canadian Healthy Infant Longitudinal Development (CHILD) Study. The CHILD Study is a partnered study with funding

from AllerGen, Canadian Institutes of Health Research (CIHR) and other stakeholders. In addition, this programme aims to determine the 'prime-candidate' environmental events and exposures during infancy and early childhood involved in the development and perpetuation of a predisposition to allergic disease, as well as to investigate the interaction of airborne pollutants and allergens, study the role of infection in allergy/asthma and study prevalence and expression of allergy/asthma in specific Canadian populations.

## Programme B

### – Diagnostics and Therapeutics

#### Programme Leaders:

Dean Befus, PhD, University of Alberta

Paul O'Byrne, MB, FRCP(I), FRCP(C), FRCP(E),  
FRCP(Glasg), McMaster University

#### Strategic Focus:

Biomarkers, immune monitoring and drug development/discovery

AllerGen's *Diagnostics and Therapeutics* research programme aims to identify indicators of asthma and allergic disease, develop effective monitoring methods and to test and develop new therapeutics to treat allergy, asthma and immune-related diseases. Programme B also aims to move biomarkers and immune monitoring science out of the laboratory and apply them to the development of new therapies and drug targets in a clinical setting.

## Programme C

### – Public Health, Ethics, Policy and Society

#### Programme Leaders:

Susan Elliott, PhD, University of Waterloo,  
formerly of McMaster University





Malcolm Sears, MB



PJ Subbarao, MD



Jean Marshall, PhD



Diane Loughheed, MD

Allan Becker, MD, University of Manitoba

#### **Strategic Focus:**

Allergic disease management and surveillance

AllerGen's *Public Health, Ethics, Policy and Society* research programme aims to assess current legal frameworks, policies and education systems, as well as prevalence and perception issues, to fill knowledge gaps and enable evidence-based policy and practice to improve disease management and public health. The programme also aims to further the investigation of psychosocial impacts and the health economics of allergic diseases, including food allergy, allergic rhinitis, asthma and anaphylaxis to inform policy and practice.

AllerGen strives to achieve its mandate of investing in innovative and results-focused allergic and

related immune disease research. In order to realize this mandate, AllerGen has developed four cross-programmatic, multi-disciplinary research platforms:

#### **Cross-Programmatic Research Teams and Platforms**

##### ***Established Cross-programmatic Teams***

##### **The Canadian Healthy Infant Longitudinal Development (CHILD) Study**

##### **Research Leaders:**

Malcolm Sears, MB, ChB, FRACP, FAAAAI,  
McMaster University  
PJ Subbarao, MD, MSc, FRCP(C),  
University of Toronto

##### **Food Allergy and Anaphylaxis**

##### **Research Leader:**

Jean Marshall, PhD, Dalhousie University

##### ***Emerging Cross-programmatic Teams***


##### **Mind-Body Interactions and Allergic Disease**

##### **Occupational and Work-related Allergy and Asthma**

##### **Research Leader:**

Diane Loughheed, MD, MSc, FRCP(C),  
Queen's University

2009 . 2010

A photograph of a white car in a traffic jam. Thick white smoke is rising from the engine area, partially obscuring the rear window and side mirror. In the background, other cars are visible, including a yellow taxi, and the scene is set in an urban environment with trees and buildings.

In addition to the development of a transferable traffic pollution model, which could have international benefit, Dr. Brauer's research is adding significant value to research on other diseases beyond asthma.

## Strategic Research Highlights

### Programme A

#### – Gene-Environment Interactions

##### **Traffic-related air pollution as a risk factor for the development of childhood asthma**

What impact does traffic-related air pollution have on the development of asthma in children? Dr. Michael Brauer, Professor, Department of Medicine, School of Environmental Health at the University of British Columbia and his research team are engaged in cutting-edge research that will provide them with:

- i. An understanding of the role of traffic-related air pollution in the development of childhood asthma;
- ii. An appreciation of the role of genetic factors in the initiation of childhood asthma by traffic-related air pollution;
- iii. An assessment of trends in spatial patterns of traffic-related air pollution in two major Canadian cities (Vancouver and Toronto); and
- iv. A leadership role for AllerGen and Canadian researchers in international collaborative efforts related to gene-air pollution interactions and asthma.

During the initial phase of the research project, Dr. Brauer's team produced maps of long-term

average traffic-generated air pollution concentrations in Edmonton, Alberta and Winnipeg, Manitoba. These maps are based on models that predict pollution concentrations from data on land use, road configurations, topography and other spatial predictors and provide a tool for estimating exposure to traffic-generated air pollution based on locations such as residences or schools. The maps will be used to estimate exposure in the CHILD Study, which examines the influences of environmental factors on children's health.

One of the unique aspects of this work is the simultaneous development of models that analyze traffic-generated air pollution exposure and asthma development for two different cities, Winnipeg and Vancouver, using common data collection and modeling techniques. This allowed for the evaluation of the "transferability" of traffic pollution prediction models between cities, which has been identified as an important research need.

In addition to the development of a transferable traffic pollution model, which could have international benefit, the team's research is adding significant value to research on other diseases beyond asthma. The team is collaborating with a Health Canada research group that is using its

Edmonton map in an analysis of the relationship between air pollution exposure and risk of stroke, as well as a multi-disciplinary team of researchers based at the School of Environmental Health, University of British Columbia for a study on the relationship between environmental and occupational exposures and cancer.

This research project will continue until 2012 with the goal of determining if exposure to traffic-related air pollution (TRAP) increases the risk of incident asthma in children and to develop and apply infrastructure to investigate gene - environment interactions related to asthma and allergy. This project's success is in large part due to AllerGen's extensive networking of experts in environmental exposure, epidemiology, asthma/allergy and genetics in Canada and internationally.

### Programme B:

#### Diagnostics and Therapeutics

##### **Cross-programmatic successes facilitated by the AllerGen Clinical Investigator Collaborative (CIC): focus on the genetics of the early and late responses to an allergen challenge**

AllerGen's CIC, a national clinical trials consortium, led by Dr. Paul O'Byrne, EJ Moran Campbell Professor in Respiratory Medicine and Chair,



Department of Medicine at McMaster University, began in 2005 with AllerGen support. Now in its fifth year, the AllerGen CIC has expanded its research and clinical trial collaborations globally, with satellite sites in Stockholm, Sweden and Rotterdam, Netherlands. The AllerGen CIC provides

an important commercial advantage to pharmaceutical and biotechnology companies, both large and small, by assisting them with their decisions about the clinical advancement of potential new therapies for asthma. The CIC offers one of the best teams in the world when it comes to conducting

Phase II trials for new therapeutics, and the key to its success is the quality of the associated research it conducts.

The AllerGen CIC has three main research objectives:

- i. To use selective pharmacological tools to understand the pathobiology of allergen-induced airway responses and airway inflammation.
- ii. To study the activity of potential new therapies for asthma.
- iii. To provide blood and tissue samples from well-phenotyped mild allergic asthmatic subjects to other investigators within the AllerGen network, to help better understand the mechanisms of allergic asthma.

The AllerGen CIC agreed to undertake three studies with novel approaches to treat asthma in 2009-10. Each of these studies had a strong pre-clinical rationale for evaluating the molecule in allergic asthmatic subjects. An allergen inhalation challenge was used in each of the studies to examine the activity of the molecule in asthmatic airways.

The allergen challenge protocol of the CIC has consistently proven itself to be a useful research

#### 2009-2010 AllerGen Snapshot\*

Network Partners across sectors	164
Highly Qualified Personnel (HQP) in Network	396
HQP working on Network research	318
Other participating students & new professionals	78
Investigators and Collaborators	269**
Principal Investigators	59
Co-Investigators	74
Collaborators	136
Full-time Equivalent Network Research Personnel	164
Funded Research Programme active projects	52
<i>Gene-Environment Interactions</i>	12
<i>Diagnostic and Therapeutics</i>	24
<i>Public Health, Ethics, Policy and Society</i>	16
Canadian academic institutions	19
Canadian research institutes	23
Total publications	727
New publications	286
Reach	18
Canadian provinces	8
International collaborating countries	10

\* Current to March 31, 2010

\*\* AllerGen-funded projects 2009-2010



**The AllerGen CIC provides an important commercial advantage** to pharmaceutical and biotechnology companies, both large and small, by assisting them with their decisions about the clinical advancement of potential new therapies for asthma. The CIC offers one of the best teams in the world when it comes to conducting Phase II trials for new therapeutics, and the key to its success is the quality of the associated research it conducts.

and clinical tool for evaluating allergic diseases such as asthma by confirming allergic responses to specific allergens, investigating the mechanisms of disease and evaluating the effectiveness of potential therapies. The CIC *Allergen Inhalation Challenge* is undertaken in collaboration with AllerGen genetics researcher, Dr. Scott Tebbutt, Assistant Professor at the University of British Columbia. Dr. Tebbutt and his research team are investigating the functional genomics, proteomics and ultimately the genetic basis of the physiological and cellular characteristics of allergic responses to allergen challenge. They are looking at three populations: one from a study in the AllerGen CIC, another from the Environmental Exposure Unit (EEU) at Kingston General Hospital/Queen's University and a third from the Western Red Cedar Asthma Cohort (WRCA) at the University

of British Columbia. Tebbutt has a particular interest in why some individuals, when exposed to an allergen (*via* inhalation), develop an isolated early response while other individuals develop both early and late phase responses.

Dr. Tebbutt and his team have successfully gathered samples from challenged atopic asthmatic individuals in the CIC *Allergen Inhalation Challenge*. Approximately 70 subjects were recruited, challenged and sampled for DNA, RNA and plasma (from blood) at two time points (pre- and post-challenge).

During the next phase of this project, Dr. Tebbutt and his team are working towards a detailed analysis of the phenotypes from the CIC (and EEU) cohorts. Findings to date will allow researchers to appropriately select matched subject samples

for pilot molecular analyses, including plasma lipids and cytokines, and blood cell gene expression. Recruitment, challenge and sampling will continue for the CIC and WRCA cohorts.

This initiative and the work of the CIC represent a collaborative effort between two of AllerGen's Integrated Research Programmes: *Gene-Environment Interactions* (Programme A) and *Diagnostics and Therapeutics* (Programme B). In summary, the AllerGen CIC has made available to Canadian investigators across the country, highly selective molecules to study the pathobiology of allergen-induced airway responses. In addition, the CIC has resulted in Canada becoming recognized by pharmaceutical companies as the global leader in evaluating potential new asthma therapeutics. Finally, operating with an AllerGen budget of \$2 million to date, the CIC has



leveraged approximately five additional partner dollars for every AllerGen dollar of investment, for a total investment of over \$12 million in clinical trials research undertaken in Canada.

**Programme C:**  
**Public Health, Ethics, Policy and Society**  
**Engaging Aboriginal families affected by allergies and asthma in support and educational program development**

Despite higher rates of asthma and allergies in Aboriginal youth, which negatively impact quality

of life and psychosocial wellbeing, accessible interventions that focus on the specific support needs and preferences of affected families are non-existent.

No study to date has investigated the resources, support, education needs and intervention preferences of affected Aboriginal adolescents and parents. AllerGen investigator, Dr. Miriam Stewart, Professor at the University of Alberta is determined to change this.

Dr. Stewart is building upon two AllerGen-

funded pilot projects that she has conducted to investigate the social support needs and preferences of non-aboriginal children and adolescents with asthma and/or anaphylaxis and their parents as well as to engage Aboriginal families affected by allergies and asthma in the development of support and educational programs.

The research being conducted expands the scope of the initial pilot studies by:

- i. Focusing on the support needs of Aboriginal adolescents with asthma and allergies and their parents;
- ii. Designing and pilot-testing an innovative accessible support and education intervention that meets these needs, in collaboration with Aboriginal stakeholders; and
- iii. Building pertinent partnerships in Alberta, Manitoba and Nova Scotia.

This three-phase study is being conducted by an inter-disciplinary team based in Alberta and will include:

- i. A four-day *Allergy Asthma Camp* that will be facilitated by an Aboriginal asthma educator and a community representative;
- ii. Input from stakeholder groups on appropriate support interventions; and





**The research being conducted by Dr. Stewart and her team** is advancing AllerGen's goal to undertake research on asthma and allergy in Canada's Aboriginal communities. Through an improved understanding of the social, cultural and economic burden of asthma, allergies and related immune diseases, the research is translating evidence into practice.

iii. Discussion of study findings and knowledge translation strategies through a 'co-learning' format.

Notable project milestones are that:

- A Community Advisory Committee was established in Alberta comprising academics, school and community officials and Elders.
- Relationships were built and approval was gained for the study from Aboriginal community and school officials representing four Eastern Métis Settlements and two First Nations communities within Alberta.
- Support has been secured from selected

schools within Edmonton Public Schools and has received approval from the Cooperative Activities Program.

- The study has been presented at various school and community events focused on Aboriginal children and their parents.
- Opportunities were created for six Aboriginal Community Research Assistants to develop research skills and represent the study at various community and school events, and network with health care providers or Aboriginal people who can assist with recruitment.
- Fifty-eight interviews have been conducted with Aboriginal children who have allergies and asthma and their parents, half of which have been transcribed and are being used

for data analysis.

- Successful grant applications were submitted to CIHR and the Alberta Centre for Child, Family and Community Research (ACCFRCR), resulting in supplementary research funding.

The research being conducted by Dr. Stewart and her team is advancing AllerGen's goal to undertake research on asthma and allergy in Canada's Aboriginal communities. Through an improved understanding of the social, cultural and economic burden of asthma, allergies and related immune diseases, this research is translating evidence into practice that will improve the quality of life for aboriginal people.

## Cross-Programmatic Research Teams and Platforms



Four study centres, Vancouver, Edmonton, Winnipeg and Toronto, are responsible for collecting and maintaining the massive data-set that will allow researchers to track the onset of allergic diseases across a large group of individuals. Ultimately, the information that the CHILD Study generates will lead to a far greater understanding of the causes of asthma, allergy and related immune diseases.

### The Canadian Healthy Infant Longitudinal Development (CHILD) Study

The Canadian Healthy Infant Longitudinal Development (CHILD) Study is a pan-Canadian study that is gathering data and samples related to the early life development of allergy, asthma and other environmentally-triggered diseases. Led by Dr. Malcolm Sears, Professor of Medicine at McMaster University, the study aims to follow 5,000 Canadian children for six years, from pre-birth to age five. It is the largest longitudinal birth cohort study in Canada and among the most important such studies in the world, as it has a high potential for breakthrough discoveries about the environmental triggers for asthma, allergy and related immune diseases.

Four study centres: Vancouver, Edmonton, Winnipeg and Toronto, are responsible for collecting and maintaining the massive data-set that will allow researchers to track the onset of allergic diseases across a large group of individuals. Ultimately, the information that the CHILD Study generates will lead to a far greater understanding of the causes of asthma, allergy and related immune diseases.

Formal recruitment for the CHILD Study began in July 2009 and during 2010, over 500 participants were successfully recruited. Recruitment numbers for the CHILD Study continue to grow on a daily basis tracking towards the goal of over 1,000 recruits by September 2010.

With research suggesting that there are many environmental factors that may affect a child's risk

of developing asthma, allergies or related immune diseases, more research is needed to help us better prevent and manage these diseases. The CHILD Study will provide a wide spectrum of information from participating Canadian families and will determine which environmental factors potentially affect the health of Canadian children.

#### Site leaders for the CHILD Study are:

*Alberta:* P Mandhane, MD,  
University of Alberta

*Manitoba:* A Becker, MD,  
University of Manitoba

*Toronto:* PJ Subbarao, MD, MSc, FRCP(C),  
The Hospital for Sick Children

*Vancouver:* S Turvey, MBBS, DPhil, FRCP(C),  
University of British Columbia

## Food Allergy and Anaphylaxis

### Canadian Group on Food Allergy Research (CanGoFAR)

AllerGen investigators, immunology experts, clinical allergists, toxicologists, geneticists and others from across Canada are collaborating through CanGoFAR with their research effort directed towards the development of new approaches to understanding and managing food allergy. The goal of AllerGen's research investments in *Food Allergy and Anaphylaxis* is to understand its prevalence, triggers, pathogenesis and disease management, refine diagnostic and treatment strategies, inform evidence-based public policy and ultimately reduce risk and improve safety for food allergy sufferers in Canada.

The current CanGoFAR research project has three main aims:

#### i. **Clinical trials and new tolerance targets:**

A team approach will be used to investigate how severe reactions to food can be prevented in a clinical setting through a preliminary trial in 30 subjects, using very low, repeated doses of allergenic foods given under carefully controlled conditions to ensure safety.

#### ii. **Effector mechanisms and novel therapies:**

Studies that have been completed by CanGoFAR investigators and others have shown that two substances — platelet-activating factor (PAF) and histamine, may have a particularly important role in severe food allergy reactions. CanGoFAR is further examining the importance of these two substances in order to translate findings to the clinical setting, using agents that can block the action of these molecules.

#### iii. **Collaboration with food industry/**

**government agencies:** The CanGoFAR team will work with the food industry and government bodies to develop safer foods for allergic individuals, and strategies to prevent the development of food allergies, which may involve modified foods and changes to public policy.

The following high-value achievements have been realized by the CanGoFAR team as a result of this research project:

- Relationships have been developed and discussions are ongoing with food and seafood companies;
- Extended interactions have occurred with clinicians performing oral challenge studies

internationally;

- A network of Canadian researchers with a focus on food allergy has been fostered;
- Connections have been established with Canadian and international researchers with expertise in metabolomics and proteomics, who are applying these technologies to people with peanut allergy;
- Regular interactions with community-based allergy and anaphylaxis organizations in Canada have been established; and
- Enhanced interactions with international peanut allergy and anaphylaxis organizations such as the *Food Allergy Initiative* in the United States have been enabled.

The impacts anticipated from the AllerGen CanGoFAR research project include:

- i. A better understanding of the requirements for the development of tolerance versus sensitization to target foods (e.g., peanuts) including identification of biomarkers associated with the development of de-sensitization during the course of oral immunotherapy;
- ii. Improved tools for the diagnosis of food allergy, especially peanut allergy;





- iii. Identification of biomarkers for severe/anaphylactic reaction to foods; and
- iv. Improved interactions between the food industry, regulating agencies and university/hospital-based food allergy researchers.

#### **Mind-Body Interactions and Allergic Disease**

##### **Maternal distress and the development of atopic disease in children: Potential pathways and interventions**

AllerGen's *Mind-Body Interactions and Allergic Disease* investigators are examining the connections between potential asthma and allergy triggers and interactions with brain activity. Mind-body research is conducted in each of AllerGen's three

research platforms, Programmes: *Gene-Environment Interactions* (Programme A), *Diagnostics and Therapeutics* (Programme B) and *Public Health, Ethics, Policy and Society* (Programme C) and has a direct application to the CHILD Study.

Traditional environmental risk factors do not fully explain the increase in asthma and atopy in developed countries. Dr. Anita Kozyrskyj, University of Alberta, is conducting research on a little-studied lifestyle theory. Building upon previously supported AllerGen research, which indicated that exposure to maternal stress in early childhood is associated with the development of childhood asthma, Dr. Kozyrskyj is interested in learning

more about the role of maternal stress on asthma development.

Researchers found that the risk for asthma at age seven increased by 30% following persistent exposure to maternal distress in early life. Depression has been identified as the main "toxic" component of maternal distress. Depressed mothers are more likely to smoke, less likely to breastfeed and less likely to interact with their infants, but it is not known whether or not these behaviours contribute to allergic disease in children.

Dr. Kozyrskyj's current research focus is to assess the likelihood of asthma developing in nine and ten year old children who have been exposed to maternal stress in the first year of life; the goal is to contribute new data that will support related public policy recommendations.

A secondary objective of the research will be to assess the effectiveness of an intervention (peer and nursing support) in reducing rates of allergic disease in children. These objectives will be tested using data from pre-and post-natal public health support programs in western Canada.

Knowing if the association between maternal postpartum distress and childhood asthma has a

genetic basis carries significant societal implications. Preliminary findings from the *Study of Asthma Genes and the Environment* (SAGE) suggest a gene-environment interaction. Additional funding from CIHR has enabled the creation of an online survey that was distributed to mothers of SAGE children in 2009. Once analyzed, this will be the first evaluation to look at the impact of research on maternal mental health determinants of childhood asthma and its relationship to women's beliefs and future behaviour. Findings from Dr. Kozyrskyj's research will expand the current understanding of the role that maternal stress has on childhood asthma development and will lead to improved disease management.

The long-term aim of AllerGen's Mind-Body Interactions and Allergic Disease research is to decrease the impact of allergic disease through enhanced evidence-based public health intervention strategies.

### Occupational and Work-related Allergy and Asthma

#### **Work-Related Allergy and Asthma: Prevention and Early Detection (WRAAPED) Research Program**

AllerGen's *Occupational and Work-related Allergy and Asthma* team aims to: identify the economic

and social impacts of occupational and work-related allergy and asthma; further understand the mechanisms involved in occupational and work-related asthma; develop Canadian prevalence data; inform healthy public policy; and, increase the use of improved diagnostic and prevention strategies and tools.

The objectives of the Work-Related Allergy and Asthma: Prevention and Early Detection (WRAAPED) project are to:

- i. Estimate the burden of work-related asthma (WRA) using administrative databases.
- ii. Estimate the burden and under-recognition of WRA by applying percentages to a newly-developed administrative database in Ontario of patients with current asthma, and linking this database to provincial compensation databases.
- iii. Quantify WRA morbidity in Quebec and Ontario and examine the impact of provincial differences in diagnostic approaches and compensation systems relative to timeliness of diagnosis and patterns of health care utilization.
- iv. Improve detection of WRA in primary care settings by conducting a controlled study of

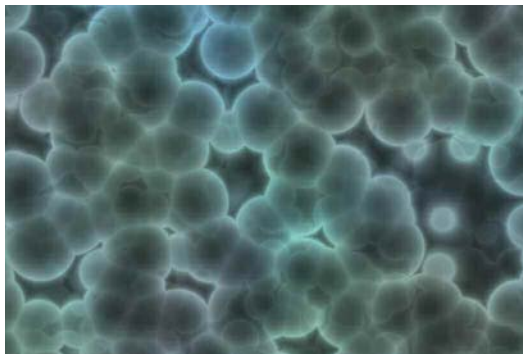
the impact of a WRA screening tool and algorithm developed with previous AllerGen funding, on detection and recognition of WRA. Patient-related outcomes such as health care utilization and quality of life will also be assessed.

- v. Extend previous research of compensation file reviews to the next five years of data (2002-2007). Trends in work-exacerbated asthma and occupational asthma over time will be analyzed with the goal of identifying factors associated with under-recognition and under-reporting to compensation boards.

The WRAAPED Research Program is a novel initiative since, in addition to the cross-Canadian team of experts committed to the project; it includes inter-provincial and inter-ministerial collaborations.

AllerGen's *Occupational and Work-related Allergy and Asthma* team unites leading researchers across Canada with expressed interests in asthma, occupational lung disease, population health and knowledge translation.

## *Innovation from Cell to Society*<sup>5</sup> – AllerGen's Annual Research Conference



*Innovation from Cell to Society*<sup>5</sup> allowed AllerGen investigators to showcase their research results and clearly demonstrate the social and economical impact of their work.

### **Fostering Knowledge Translation and Exchange**

AllerGen's Fifth Annual Research Conference, *Innovation from Cell to Society*<sup>5</sup>, was held in Québec City from February 7-9, 2010. The conference



**Mr. Graham Scott, Chair, AllerGen Board of Directors and Conference Keynote Speaker Dr. Stephen Holgate, Clinical Professor of Immunopharmacology, Southampton General Hospital, UK**

attracted 190 national and international delegates from across sectors: industry, government, clinical, academic and not-for-profit.

Invited keynote speakers included Dr. Stephen Holgate, Southampton General Hospital, UK, a world-renowned researcher in applying basic science to the clinical interface in asthma and allied disorders; Dr. Neal Cohen, University of California, San Francisco, leading thinker on the development of partnerships between academia and industry; and Dr. Alan James, Sir Charles Gairdner Hospital and Hollywood Private Hospital, Australia — an AllerGen international research collaborator and expert in respiratory medicine.

Representatives from three of AllerGen's international partner organizations: St. John's Research

Institute in Bangalore, India; the Karolinska Institute in Sweden; and the University of Western Australia, also attended the conference, showcasing AllerGen's successful outcomes from the NCE's International Partnership Initiative (IPI). Throughout the three-day conference, Canadian researchers and trainees were able to engage with these distinguished experts about their research advances and insights.

Trainee posters were presented, with authors of the top two posters from each of AllerGen's three research programmes being invited to give oral presentations to conference delegates. The poster competition and oral presentations gave trainees, Canada's future research leaders, the opportunity to showcase their research and



receive constructive feedback from AllerGen investigators, partner organization representatives, and other stakeholders.

Keynote speaker, Dr. Neal Cohen, delivered a thought-provoking presentation on open innovation networks between academia and industry, which featured AllerGen industry partner respondent Dr. Catherine Tribouley (Research Fellow, Molecular Profiling, Merck Research Laboratories). This interactive presentation format highlighted key partnerships between academic and industrial sectors that have been fostered by AllerGen.

Patient advocates play an integral role in driving change “from cell to society.” An important voice for food allergy risk reduction at AllerGen’s Annual Research Conference was that of Ms. Sara Shannon, who had lost her daughter and only child, Sabrina Shannon, to an anaphylactic reaction in 2003. Sara was the leading force behind groundbreaking Ontario legislation, *Sabrina’s Law*, to protect children at risk, and is well known and respected for her advocacy work regarding the rights of children at risk for anaphylaxis both nationally and globally. Sara participated in round table discussions at the conference, offering her personal experience and expertise on anaphylaxis safety.



**International partners from St. John's Research Institute, Bangalore, India attended AllerGen's 2010 Annual Research Conference to further their collaboration with AllerGen researchers and trainees shown above.**

#### Conference Sponsors

Special acknowledgement goes out to all of the sponsors for their generous support of *Innovation from Cell to Society*<sup>5</sup> – they make AllerGen's Annual Conference possible.

**Gold Sponsors:** GlaxoSmithKline, King Pharmaceuticals

**Silver Sponsors:** McMaster University, Merck, Novartis

**Media:** Longwoods.com

**Supporters:** Allergy/Asthma Information Association, Asthma Society of Canada, Canadian Thoracic Society, Canadian Allergy, Asthma and Immunology Foundation

2009 . 2010

A young boy with dark hair and a bright smile is the central focus, looking slightly off-camera. He is wearing a light blue collared shirt under a light green sweater. He holds a silver fork with a small piece of food on it. In the background, a man in a green sweater is seated at the same table, eating. The table is set with plates of food, including what appears to be quinoa, vegetables, and a glass of orange juice. The setting is a bright, indoor dining area.

AllerGen aims to foster and maintain networking and partnership arrangements that enable knowledge and technology exchange and reposition Canada at the forefront of innovation.



## Network Partners and Collaborators



The 2009-2010 year was one of continued growth and maturation for AllerGen. Since 2008-2009 the number of AllerGen partners participating in the Network increased by 35% and the number of highly trained professionals, by 26%.

### Academic Institutions: 36

American University  
 Brandon University  
 Charité-University Medicine Berlin  
 Dalhousie University  
 Groningen University  
 Harvard University  
 Indiana University  
 McGill University  
 McMaster University  
 Mt. Sinai School of Medicine  
 Purdue University  
 Queen's University  
 Simon Fraser University  
 Université de Montréal  
 Université du Québec à Chicoutimi  
 Université Laval  
 University of Alberta  
 University of Bristol

University of British Columbia  
 University of Calgary  
 University of California  
 University of Guelph  
 University of Illinois at Chicago  
 University of Manchester  
 University of Manitoba  
 University of New Brunswick  
 University of North Carolina at Chapel Hill  
 University of Ottawa  
 University of Oxford  
 University of Saskatchewan  
 University of Tasmania  
 University of Toronto  
 University of Waterloo  
 University of Western Australia  
 University of Western Ontario  
 Utrecht University

### Hospitals and Healthcare Centres: 27

BC Children's Hospital (Vancouver)  
 BC Women's Hospital & Health Centre (Vancouver)  
 Credit Valley Hospital (Mississauga)  
 Grey Nuns Community Hospital (Edmonton)  
 Hamilton Health Sciences  
 Hôpital du Sacré-Cœur de Montréal  
 Hôpital Ste-Justine (Montreal)  
 Institut universitaire de cardiologie et  
 de pneumologie de Québec  
 IWK Health Centre (Halifax)  
 Kingston General Hospital  
 Manitoba Institute of Child Health  
 McGill University Health Centre  
 Misericordia Hospital (Winnipeg)  
 Mount Sinai Hospital (Toronto)  
 Royal Alexandra Hospital (Edmonton)  
 Royal University Hospital (Saskatoon)  
 St. Boniface Hospital



St. Joseph's Healthcare Hamilton  
 St. Michael's Hospital (Toronto)  
 St. Paul's Hospital (Vancouver)  
 Stollery Children's Hospital (Edmonton)  
 Sturgeon Community Hospital (Alberta)  
 The Hospital for Sick Children (Toronto)  
 University of Alberta Hospital  
 Vancouver General Hospital  
 Winnipeg Health Sciences Centre  
 Women's Health Concerns Clinic (Hamilton)

#### **Industry: 24**

AIM Therapeutics  
 Allergic Living Magazine  
 Altair Therapeutics  
 Asmacure  
 AstraZeneca Canada Inc.  
 BioDiscovery Inc.  
 Chenomx  
 Fisher Scientific  
 Genentech Inc.  
 Gennum Corporation  
 GlaxoSmithKline Inc.  
 Graham Scott Strategies Inc.  
 King Pharma  
 Leap Learning Technologies  
 Longwoods Publishing  
 Lumira Capital Corporation  
 Mark Bisby Consultants  
 Merck Frosst Canada  
 Novartis Pharmaceuticals Canada Inc.

Schering-Plough Canada Inc.  
 Sedulous Investments  
 Sporometrics Inc.  
 TEC Edmonton  
 Wyeth Pharmaceuticals Inc.

#### **Federal Agencies: 9**

Assisted Human Reproduction Canada  
 Canadian Mortgage and Housing Corporation  
 Environment Canada  
 Health Canada, Bureau of Chemical Safety  
 in the Food Directorate  
 Health Canada, Air Health Division, Water,  
 Air and Climate Change Bureau  
 National Institutes of Arthritis and  
 Musculoskeletal and Skin Diseases  
 National Institutes of Health  
 National Research Council - Biotechnology  
 Research Institute  
 Public Health Agency of Canada

#### **Provincial Agencies: 14**

Alberta Health Services  
 Alberta Ministry of Education  
 Evergreen Catholic Separate Regional School  
 Division #2 (Alberta)  
 Fonds de la recherche en santé du Québec  
 Horizon Health Network (New Brunswick)  
 The District 18 School Board (New Brunswick)  
 Kikino Elementary, Northern Lights School  
 Division No.69 (Alberta)

Louis Riel School Division (Manitoba)  
 Ontario Ministry of Health and Long-Term Care  
 Ontario Ministry of Labour  
 River East Transcona School Division (Manitoba)  
 St. James School Division (Manitoba)  
 Winnipeg School Division  
 Workplace Safety and Insurance Board, Ontario

#### **Research Institutes and Networks: 20**

C2OERD - The Lung Centre,  
 Vancouver General Hospital  
 Canadian Institute for Advanced Research  
 The Canadian Research Institute for Social Policy  
 (CRISP - New Brunswick)  
 Centre de recherche du Centre hospitalier  
 de l'Université de Montréal  
 Child and Family Research Institute, UBC  
 Firestone Institute for Respiratory Health,  
 McMaster University  
 Gage Occupational and Environmental Health Unit,  
 University of Toronto  
 Helmholtz Zentrum München,  
 University of Munich  
 Institut de Recherche Robert-Sauvé en  
 Santé et en Sécurité du Travail, Québec  
 Institute for Clinical Evaluative Sciences (ICES)  
 International Science and Technology  
 Partnerships Canada  
 James Hogg iCAPTURE Centre, UBC

Karolinska Institute (Sweden)  
Occupational Allergy Interest Group of  
European Academy of Allergy and  
Clinical Immunology  
Robarts Research Institute,  
University of Western Ontario  
Southern Ontario Centre for Atmospheric  
Aerosol Research  
St. John's Research Institute (India)  
The UBC Centre for Health and Environment  
Research  
U.S. Environmental Protection Agency  
Uvic Genome BC Proteomics Centre,  
University of Victoria

#### **Associations/Foundations/**

#### **Other Bodies: 45**

Alberta ACADRE-NEAHR Network  
Alberta Asthma Centre  
Alberta Heritage Foundation for Medical Research  
Alberta Strategy to help Manage Asthma  
& COPD (ASTHMA C)  
Allergy Asthma Information Association (AAIA)  
Allergy, Asthma Information Association  
(Prairies, NWT, Nunavut & Atlantic Division)  
Alexander Von Humboldt Foundation (Germany)  
The Allergy and Environmental Health  
Association of New Brunswick  
American Thoracic Society

Anaphylaxis Canada  
Association québécoise des allergies  
alimentaires (AQAA)  
Asthma Society of Canada  
BC Lung Association  
Burroughs Wellcome Fund  
Canadian Allergy Asthma and Immunology  
Foundation (CAAIF)  
Canadian Child Health Clinician Scientist Program  
Canadian Cystic Fibrosis Foundation  
Canadian Lung Association  
Canadian Medical Protective Association  
Canadian Society of Asthma and  
Clinical Immunology  
Canadian Thoracic Society  
Centre for Asthma in the Workplace  
Centre for Research Expertise in  
Occupational Disease  
Childhood Asthma Foundation  
Children's Hospital Foundation of Manitoba  
Chongqing Biomedical Engineering Society  
(China)  
Imperial College of London, GABRIEL Project  
Global Allergy and Asthma European Network  
(GA<sup>2</sup>LEN)  
Hamilton Community Foundation  
International Union Against Tuberculosis  
and Lung Disease  
Ireland Canada University Foundation

The Lung Association, Alberta & NWT  
Lung Association of Nova Scotia  
Manitoba ACADRE-NEAHR Network  
Michael Smith Foundation for Health Research  
Multiple Sclerosis Society of Canada  
National Collaborating Centre for  
Environmental Health  
National Sanitarium Association  
Nova Scotia ACADRE-NEAHR Network  
Nurse Practitioners' Association of Ontario  
Ontario Lung Association  
Respiratory Global Research And  
Training Network  
St. Joseph's Immigrant Women's Centre  
(Hamilton)  
The COPD and Asthma Network of Alberta  
World Health Organization – Global Alliance  
against chronic Respiratory Disease  
(GARD)

2009 . 2010

**AllerGen's national network fully embraced the IPI program with 55 investigators collaborating internationally, representing 41% of AllerGen's researchers.**





## Knowledge and Technology Exchange and Exploitation (KTEE)



**AllerGen is committed to KTEE and continually endeavours** to find meaningful and unique channels to commercialize, engage, inform and share knowledge arising from Network research undertaken with partners and stakeholders including not-for-profit asthma, allergy and related immune disease organizations, clinicians and healthcare professionals, asthma educators, the general public, policy makers and other decision makers.

An effective KTEE strategy is critical to successfully disseminating Network research results and ensuring that the social and economic value of AllerGen's national and international initiatives are realized. AllerGen is committed to KTEE and has invested in a wide range of initiatives to commercialize, engage, inform and share knowledge arising from Network research undertaken with partners and stakeholders including not-for-profit asthma, allergy and related immune disease organizations, clinicians and healthcare professionals, asthma educators, the general public, policy makers and other decision-makers.

### **AllerGen's International Partnership Initiative (IPI)**

As a highly integrated, multi-disciplinary and multi-sectoral national research network, AllerGen has established strong ties with international organizations and academic institutions. This has been possible through AllerGen's successful implementation of an IPI program.

AllerGen's national network fully embraced the IPI program with 55 investigators collaborating internationally, representing 41% of AllerGen's researchers.

### **Highlights from AllerGen's 2009-2010**

#### **IPI collaborations:**

Significant developments continued to emerge from AllerGen's partnership with the International

Union Against Tuberculosis and Lung Disease (The Union) in El Salvador led by AllerGen investigator Dr. Dean Befus and asthma educator and allergy and research collaborator, Shawna McGhan, both from the University of Alberta. In April 2009, development and planning of resources and services, including the structure and activities of the asthma clinic, community-based resources and teaching tools relevant for use in El Salvador, were completed. A press release was developed in Edmonton and picked up by the media, highlighting the partnership and related plans. Canadian teams revisited El Salvador in January and March 2010 where major milestones were achieved — the signing of a Memorandum of Understanding, and presentation of the "*Asthma Action Plan*" adapted from the Alberta Asthma



Action Plan and *"My Asthma Calendar."* The El Salvadorian *"Asthma Teaching Flip Chart"* was also presented in draft form and strategies for its use were explored. A firm commitment, next steps and partnership approach were defined between the University of Alberta, The Union and the Ministry of Health for a country-wide rollout of the asthma program, a management pilot and an Asthma Drug Facility in El Salvador.

AllerGen's partnership with the Global Asthma and Allergy European Network (GA<sup>2</sup>LEN) has positioned

AllerGen investigators in a leadership position with respect to genome-wide association studies of asthma and allergy. Relationships developed through the GA<sup>2</sup>LEN partnership are leveraging future opportunities for AllerGen. A meeting was held at the Collegium Internationale Allergologicum Symposium held in Ischia, Italy in April 2010 concerning further advancement of the GABRIEL collaboration.

In November 2009, AllerGen investigators participated in meetings in Sweden with collaborators

from the Karolinska Institute and representatives of the Institute of Epidemiology of the Helmholtz Zentrum München. Presentations were delivered on *"Traffic-related air pollution relating to infant bronchiolitis and childhood asthma"* and *"Harmonizing gene and environment data: TRAP's association with incident asthma, as mediated by oxidative stress."*

Following the meetings in Sweden, trainee and investigator exchanges evolved with the University of British Columbia. Two representatives from the Karolinska Institute met with AllerGen investigators to discuss traffic-related air pollution as a risk factor for the development of childhood asthma (TAG) project. A half-day graduate student symposium was held, allowing a trainee from the Karolinska Institute and seven University of British Columbia graduate students working on air pollution and health research to share research protocols and findings.

AllerGen and St. John's Research Institute, Bangalore, India held a productive workshop at the AllerGen Annual Research Conference in Quebec City in 2010. The team is now developing an application to the *Grand Challenges Canada* program to obtain additional funding. This would

enable continuation of their groundbreaking research collaboration, and expand the capacity of their comparative findings about nutritional impacts on the development of chronic diseases, linking malnutrition and obesity to allergy, asthma and diabetes in childhood.

The Respiratory Global Research And Training (GReAT) Network, which fills a knowledge gap by providing training about respiratory disease surveillance by collecting, processing and analyzing national and global data to identify trends, gaps and solutions to improve respiratory care and reduce the related burden of illness on individuals, families, and society, has been another valuable outcome of the IPI program. An e-learning program was developed and conducted *via* the internet using videoconferencing and desktop-sharing software. Eight international trainees: two students from Pakistan, one from India, two from Brazil, one from Dubai, one from Syria, and one from Thailand, registered and completed the 2009/2010 program. Trainees are working on submitting abstracts to local conferences and preparing research papers for consideration by peer-reviewed journals.

### AllerGen in the Media

#### Sharing AllerGen successes

AllerGen achieved a high level of media coverage throughout 2009-2010.

#### AllerGen in the Media

	Print	Broadcast	Web/Newsletter
2009-2010	21	7	2
All years	157	30	37

#### AllerGen Publications

AllerGen researchers produced 80 refereed publications from April 2009 to March 2010. The total of all publications, (refereed, non-refereed and specialized) for the 2009-2010 fiscal year was 286, an increase of 86% over the 154 total publications produced during fiscal year 2008-2009.

#### Global Alliance against chronic Respiratory Diseases (GARD) Annual Conference

Drs Teresa To, Louis Philippe Boulet and Diana Royce provided international leadership on behalf of AllerGen at the 2010 annual GARD-WHO conference held in Toronto, Ontario in June. Dr. Louis-Philippe Boulet participated as an invited speaker on the topic of *"Patient Education,"* and Dr. To was the official presenter on surveillance, as well as the nominated chair and rapporteur of

a working group that focused on *"Primary Prevention of Chronic Respiratory Disease."*

AllerGen representatives took part in a working group on care gaps and strengthening capacity for integrated prevention and control of non-communicable diseases in primary care and primary prevention of respiratory diseases. This collaboration with GARD-WHO has raised the profile of AllerGen and facilitated the establishment of international collaborations, particularly in the field of education and prevention.

#### Ontario Asthma Plan of Action Forum

AllerGen's Managing Director, Diana Royce, attended the Ontario Asthma Plan of Action Forum in Toronto, Ontario on 27 January 2010. Dr. Royce delivered a presentation on AllerGen's KT tool, *Knowledge Translation Planning Tools for Allergic Disease Researchers*, and distributed copies to all attendees.

#### American Academy of Allergy Asthma and Immunology (AAAAI) Annual Meeting

AllerGen was represented by several researchers and trainees at the AAAAI meeting in New Orleans, February 26 – March 2, 2010.

### **European Academy of Allergology and Clinical Immunology (EAACI) Conference**

AllerGen researchers attended the prestigious and world-renowned EAACI conference held in Warsaw, Poland from 6-10, June 2009. The conference, *Allergy and Asthma without Frontiers*, attracted over 6100 delegates and featured over 300 presenters from 42 countries.

The conference also provided AllerGen investigator, Dr. PJ Subbarao, Deputy Director of the CHILD Study, an opportunity to attend a GA<sup>2</sup>LEN meeting that took place at the conference.

### **The Canadian Society for Allergy and Clinical Immunology (CSACI) Annual Scientific Meeting**

The CSACI Meeting was held in Halifax, Nova Scotia, 22-25, October 2009. AllerGen was well represented with investigators Drs Dean Befus, Susan Waserman, Anne Ellis, Allan Becker, Micheal Kobor, Zave Chad and Managing Director, Dr. Diana Royce in attendance. Dr. Susan Waserman presented on *"A New Initiative in Immunotherapy Training;"* Dr. Allan Becker delivered a presentation on *"Asthma in the Pre-School Child: A rose by any other name?;"* Dr. Dean Befus discussed *"Novel Pathways in the Neuro-Regulation of Allergic*

*Asthma: "Challenges in Translational Research;"* and Dr. Michael Kobor explored *"Epigenetic Control of Gene Expression on the Effects of Stress in Asthma."*

### **Policy, Ethics, Law and Society (PELS) Committee**

AllerGen's PELS Committee is a standing advisory committee reporting to AllerGen's Research Management Committee (RMC). PELS was established in 2009 to support infrastructure and advice for building bridges between researchers and decision-makers across levels and sectors, including government. PELS advises and supports the RMC in facilitating the translation of AllerGen research that has clinical, policy, ethical, and social implications, identifies emerging issues that warrant a response from the Canadian allergic and immune disease research community, and facilitates the establishment of enduring links amongst AllerGen researchers and Canadian clinicians and policymakers.

On 8 February, 2010, the Chair of the AllerGen PELS Advisory Committee, Tim Caulfield, of the University of Alberta, hosted a policy workshop in Quebec City, Quebec during the annual AllerGen *Innovation from Cell to Society*<sup>5</sup> research confer-

ence. Holding this workshop during the annual conference facilitated the participation of a wide range of policy practitioners and thought leaders from government, patient-based organizations and healthcare as well as leading research scientists from universities across Canada.

The workshop was attended by 18 participants from across five sectors representing clinicians, clinician-scientists, policy makers, non-profit organizations, patient advocates and researchers.

Strategic and operational priorities were identified for the PELS Committee to 31 March 2012 as well as the identification and selection of important policy issues within the scope of AllerGen's mandate around which it could generate evidence-based statements.

Priority themes for policy statements identified for the PELS Committee were:

- i. Diagnosis
- ii. Risk perception
- iii. Policy responses
- iv. Economic impact of allergic disease and implications for workplaces and industry
- v. Increasing awareness of allergic disease and the associated risks.



### **Network-wide Ethics and AllerGen Investigators' Workshops**

The PELS Committee hosted AllerGen's inaugural network-wide ethics workshop, *Challenge of Multi-site, Multi-jurisdictional Ethics Approval*, 17 December 2009 in Toronto, Ontario.

Workshop participants explored the framework of research ethics in Canada, the challenges of multi-site research, ethical aspects of international research, research with marginalized populations, and on-going Canada-wide ethics challenges such as studies involving minors, minimizing risk to research participants, and consent issues in research and law.

The three-day ethics workshop not only fostered continued dissemination and exploration within the AllerGen network, but following the workshop, Tim Caulfield, of the University of Alberta utilized information that was shared at the workshop to inform a research article, *Handling ethical, legal and social issues in birth cohort studies involving genetic research: responses from studies in six countries*, published in *BMC Medical Ethics* 2010, 11:4 (23 March 2010).

An AllerGen Investigators' Workshop held on 16 & 18, December 2009, attracted over 60 participants and afforded attendees the opportunity to hear updates on AllerGen's Integrated Research Programme. Presentations were delivered by 19 AllerGen-funded investigators on their new research initiatives and anticipated outcomes and impacts.

### **Evidence, Ethics and Health Policy Research Survey**

An *Evidence, Ethics and Health Policy Research Survey* was designed and distributed at AllerGen's Fifth Annual Research Conference. The goal of the survey was to gather information about perceptions of media representation of allergy/ asthma issues, policy and research, and its impact on policy development, funding decisions, public opinion and the use of and need for KT tools.

Significant findings arriving from survey results were that the majority of respondents (70.8%) felt that media representations of allergy/asthma issues, policy and research were accurate. Media representations of allergy/asthma issues, policy and research were also seen to impact health and research policy development (62.5%), impact funding decisions (54.2%) and impact public

opinion and understanding (85.4%). The majority of respondents (n=28) shared the view that media representations of allergy/asthma issues, and related policy and research had made them think about their work in a different way.

Lack of resources and policy barriers were identified as the top two challenges facing effective KT and over half of the respondents (56.8%) felt that KT was a very important part of their research program.

Results from this survey will inform the PELS Committee moving forward regarding media representation of allergy/asthma issues, policy and research, policy development, funding decisions and the use of and need for KT tools.

## Tomorrow's Leaders: AllerGen's Highly Qualified Personnel



**AllerGen's Goal:** To create new opportunities for the training of HQP in allergy research, patient care, innovation and the health system, and advance professional and lay knowledge about allergic and related immune diseases.

In 2009-2010 AllerGen's investments led to unique training, leadership, management and skills development opportunities for students and new professionals, educators and clinicians across Canada. AllerGen trainees are being exposed to and integrated into a national and international network of academic, clinical, private sector, public policy and patient advocacy leaders in the field. These opportunities are preparing the next generation to lead social, healthcare and economic advancements in the field of allergy and related immune disease.

### AllerGen Fellowships and Awards

- AllerGen's Canadian Allergy and Immune Diseases Advanced Training Initiative (CAIDATI) awards provide new training opportunities for undergraduate summer



**AllerGen trainees left to right: Jami Bennett, Marie-Renée Blanchet, Steven Maltby, Vicki MacDonald, Alison Hirukawa and Matt Gold.**

students and students pursuing MD, Masters and PhD degrees and post-doctoral fellows specializing in research relevant to biomedical, health, social and/or natural science and engineering research about allergy, asthma

and related immune/inflammatory processes and disease. The following are a list of recipients of AllerGen's CAIDATI awards:

- Katherine Arias, PhD, *The contribution of distinct immunological pathways leading*

to peanut induced anaphylaxis (PIA),  
McMaster University

- Svetlana Carrigan, MD, PhD, Post-Doctoral Fellow, *Mechanisms and regulations of IgE-dependent mast cell activation in allergy*, Dalhousie University
- Kathleen Fraser, MSc, *Assessing the regulatory capacity of dendritic cells as a marker of atopy in cord blood*, Queen's University
- Marie-Hélène Lambert, MSc, *Gene-Gene Interaction for CX3CR1 in asthma*, Université du Québec à Chicoutimi
- Julie Schmied, PhD, *Prophylaxis of food allergy by defined bacterial component pre-treatments in a neonatal swine model of allergy*, University of Guelph
- Elinor Simons, PhD, *The longitudinal impact of environmental exposures on the development of childhood atopy*, University of Toronto
- Christopher Skappak, PhD, *The metabolomic analysis of respiratory virus infection in an asthma model via Nuclear Magnetic Resonance (NMR) spectroscopy*, University of Alberta



AllerGen trainees left to right: Mathieu Cooney, Henry Huang, Jing Luo with Allan Becker

- Christopher Taplin, MSc, *Epigenetic profiling of bronchial epithelial cells*, University of British Columbia
- Stephanie Warner, PhD, *P63 regulates differentiation and adhesion of human airway epithelial cells: Implications for airway remodelling in asthma*, University of British Columbia
- The CTS/CLA/AllerGen Clinician Scientist Research Fellowship, valued at \$115,000 over a two year period, is provided to

increase capacity to conduct world class asthma, allergy and immune disease research in Canada. The recipient of this fellowship was **Brandie Walker**, University of Calgary.

#### AllerGen Travel Awards

In 2009-2010 AllerGen provided 40 trainees with travel awards to accelerate their professional development. Through the AllerGen Travel Award Programme, AllerGen matches partner contributions to cover the travel and accommodation



**AllerGen poster competition judges left to right: Delbert Dorscheid, Scott Tebbutt, Guy Delespesse, Irvin Mayers, Catherine Laprise, Chris Carlsten, Kelly McNagny, Anita Kozyskyj, Chris Mody**

costs of AllerGen investigators and HQP attending events (meetings, symposiums and conferences, etc.) outside of AllerGen that will contribute to their professional development.

These events must align with AllerGen's mission, values and goals and provide new opportunities for networking, research collaboration, knowledge translation, skill development and learning.

- Steven Maltby, PhD student at the University of British Columbia and Steven

Smith, PhD student at McMaster University were selected to present their work at the *Sixth Biennial Symposium* of the International Eosinophil Society in Bruges, Belgium.

- Five AllerGen trainees, Nivedita Khanna, Post-Doctoral Fellow at the University of Toronto, Michelle North, PhD student at the University of Toronto, Gurpreet Singhera, PhD student at the University of British Columbia, Mary Speck, a Research Technician at the University of Toronto and

Bruce Urch, PhD student at the University of Toronto attended the *American Thoracic Society International Conference* in San Diego, California. The conference offered more than 400 sessions and 800 speakers focused on important scientific and clinical advances in adult and pediatric respiratory medicine.

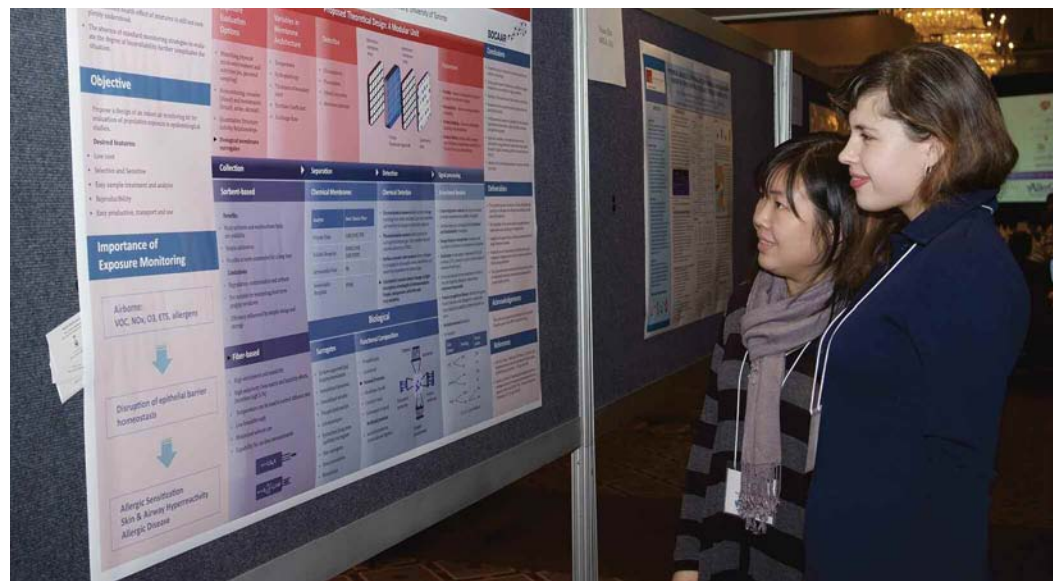
- Six AllerGen trainees attended the *American Academy of Asthma, Allergy and Immunology (AAAAI)* in New Orleans, Louisiana including, Adrian Baatjes, PhD student at McMaster University, Irene Fung, MD student at McMaster University, Delia Heroux, Research Technician at McMaster University, Pia-Lauren Reece, PhD student at McMaster University, Kristin Weiße, a Post-Doctoral Fellow at McMaster University on exchange from the Helmholtz Centre for Environmental Research, Leipzig, Germany and Sophia Xu, a PhD student at McMaster University.
- Jennifer Protudjer, PhD student at the University of Manitoba was selected to present her work at the *International Congress on Obesity* at The Karolinska Institute in Stockholm, Sweden.



### AllerGen Annual Conference Student Poster Competition

AllerGen's Fifth Annual Research Conference took place in Québec City from February 7-9, 2010. Sixty-three trainees from nine universities – Simon Fraser University, University of British Columbia, McMaster University, McGill University, University of Toronto, Queen's University, Laval University, University of Manitoba and University of Alberta — attended the conference.

The Student Poster Competition took place during the first two days of the conference and the posters were on display and viewed by the poster judges and conference attendees. AllerGen received a record number of 51 high quality abstract submissions. There were 7 in *Gene-Environment Interactions* (Programme A), 23 in *Diagnostics and Therapeutics* (Programme B), 10 in *Public Health, Ethics, Policy and Society* (Programme C) and 11 non-adjudicated posters. Six trainees (two per AllerGen Research Programme area), Programme A: Salman Ali, University of British Columbia and Michelle North, University of Toronto; Programme B: Steven Maltby, University of British Columbia and Ramses Ilaraza, University of Alberta; Programme C: Salma Bahreinian,



AllerGen trainees viewing posters at AllerGen Annual Research Conference left to right: Huan Shu and Natalia Mykhaylova

University of Alberta, and Daniel Harrington, McMaster University, were judged to be the highest scoring candidates and presented their abstracts to the conference in the form of oral presentations.

The Student Poster Competition allows AllerGen's students to share their research, to exchange ideas and to network with other trainees and researchers, clinicians, policy and decision makers, health care administrators and representatives from business, industry and government.

### AllerGen Annual Trainee Symposium

In 2009, the AllerGen Students and New Professionals Network (ASNPN) held its *Fourth Annual AllerGen Trainee Symposium*, in Montréal, Québec. The theme of the 2009 symposium was *Becoming Future Leaders: Challenges and Successes*. Speakers included:

- Dr. Jacob Kraicer, Resident Scholar, Department of Physiology, Faculty of Medicine, University of Toronto (author of *The Art of Grantsmanship*)



**AllerGen trainee poster competition winners 2010 left to right: Ramses Illaraza, Salman Ali, Steven Maltby, Michelle North, Daniel Harrington, Salma Bahreinian**

- Dr. Maya Saleh, Assistant Professor, Department of Microbiology and Immunology, and Centre for the Study of Host Resistance, McGill University (former member of CIHR Doctoral Awards Committee)
- Dr. René Cardinal, Conseiller scientifique, Fonds de la recherche en santé du Québec (FRSQ); Professeur titulaire, Département de pharmacologie, Faculté de Médecine, Université de Montréal; Directeur, Centre de recherche, Hôpital du Sacré-Cœur, Montréal

- Dr. Yuri Quintana, Director, Education and Informatics, International Outreach Program, St. Jude Children's Research Hospital
- Sheelagh Freeman, International Voice, Speech and Presentation Skills Specialist
- Dr. Nicolay Ferrari, Director of Pharmacology, TOPIGEN Pharmaceuticals Inc.
- Dr. Olga Pulido (in a private capacity)
- Dr. Alison Dziarmaga, Medical Affairs Advisor, AstraZeneca Canada Inc.
- Danie Massaad, Medical Science Liaison, GlaxoSmithKline Canada Inc.

- Dr. Qutayba Hamid, Director, Meakins-Christie Laboratories, McGill University
- Dr. Anne Ellis, Assistant Professor of Medicine, Microbiology & Immunology, Queen's University
- Dr. Simon Bacon, Chercheur-Boursier du FRSQ, Assistant Professor & University Research Fellow, Department of Exercise Science, Concordia University.

The symposium provided an excellent opportunity for trainees and new professionals to network and discuss their multi-disciplinary projects. The program included the following sessions:

- Effective grant writing: funding agency and researcher perspectives;
- Dissemination of research and knowledge translation;
- Career panel: *Small Biotech, Big Pharma and Government Perspectives*;
- Mentoring and teaching: *Supervisor-Trainee Relationship & Mentoring Junior Trainees*;
- Transitioning to the "real world;" and
- Half-day interactive workshop: *An Introduction to Presentation Skills*.

### Network Graduates

In 2009-2010, 19 trainees graduated from the Network and are working in government, industry,



academic institutions and the public sector. Specifically:

Scott Weichenthal, a former McGill University PhD student under the supervision of Dr. Claire Infant-Rivard, is now working in the Exposure Assessment Section, Air Health Effects Division, Water, Air and Climate Change Bureau of Health Canada.

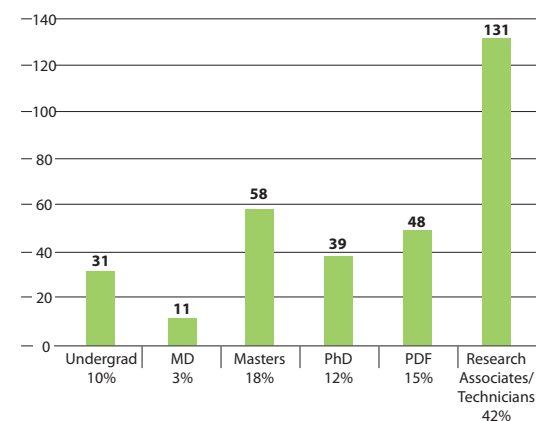
Ilan Asher, a former McMaster University post-doctoral fellow, under the supervision of Dr. Judah Denburg, completed his international fellowship and has returned to Israel where he is a practicing clinician.

Marie-Renée Blanchet, a former University of British Columbia post-doctoral fellow, under the supervision of Dr. Kelly McNagny, has completed her training and has secured a tenure track position at Laval University and is a Principal Investigator on an AllerGen project.

### AllerGen Students and New Professionals

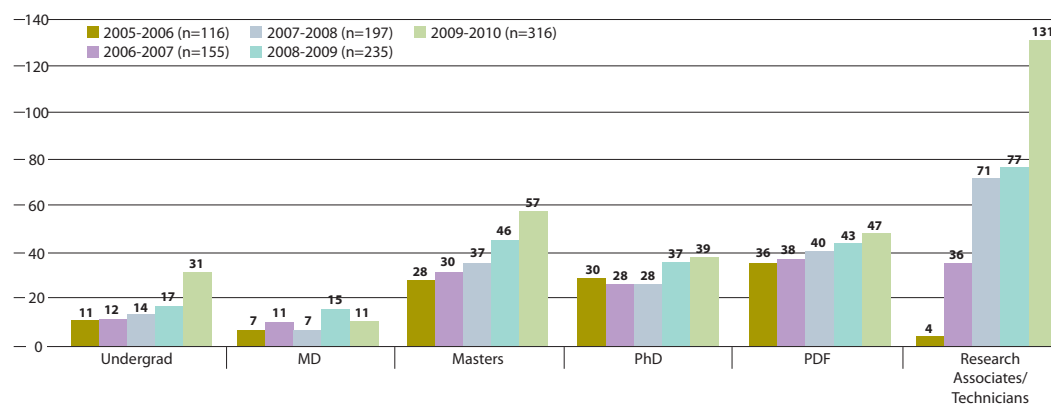
The total number of AllerGen trainees in the Network is 396. The remaining 78 HQP not illustrated on the chart below represent the students and new professionals not working on Network research but who remain active members of the ASNPN. The AllerGen ASNPN provides significant “hands-on” opportunities for trainees and new professionals to develop their own leadership, management, administrative, event planning and communications

### 2009-2010 Number of HQP Working on Network Research (N=318)



skills. In addition, the ASNPN provides strategic advice to the Advanced Education and Training Opportunities Advisory Committee (AETOAC) on AllerGen’s HQP programme priorities and tactics.

### Number of HQP Working on Network Research by Year





2009 . 2010

AllerGen trainees are being exposed to and integrated into the national and international network of academic, clinical, private sector, public policy and patient advocacy leaders in the field. These opportunities are preparing the next generation to lead social, healthcare and economic advancements in the area of allergy and related immune disease.





## Financial Overview

### AllerGen NCE Inc. Financial Overview 2009-2010

	2008-09 (Year 4)	Percentage	2009-2010 (Year 5)	Percentage
<b>Revenues</b>				
NCE Award	5,306,000	26.7%	5,216,500	29.6%
IDRC Award - St. John's Institute, Bangalore, India	110,400	0.6%	-	0.0%
Non-NCE Funds to Administrative Centre*	1,006,242	5.1%	587,183	3.3%
Non-NCE Funds To Research *	13,484,575	67.7%	11,809,790	67.0%
	<b>19,907,217</b>	<b>100.0%</b>	<b>17,613,474</b>	<b>100.0%</b>
<b>Expenditures (Cash)</b>				
Research Programs	3,244,679	64.1%	4,661,638	71.5%
Networking	592,531	11.7%	552,680	8.5%
Strategic Initiatives and Training	242,374	4.8%	222,173	3.4%
Communications	15,161	0.3%	14,461	0.2%
Administration	964,988	19.1%	1,069,159	16.4%
	<b>5,059,733</b>	<b>100.0%</b>	<b>6,520,111</b>	<b>100.0%</b>
Committed Amounts for Future research	3,496,326		3,305,582	
Cash reserves	1,569,228		1,294,582	
<b>Revenue Sources (Cash and In-Kind) 2009/10</b>				
	Cash	In-Kind	Total	Percentage
NCE	5,216,500	-	5,216,500	29.6%
Industry	2,617,566	271,650	2,889,216	16.4%
University	1,807,799	2,669,331	4,477,130	25.4%
Other Sources	628,572	497,658	1,126,230	6.4%
Hospital	844,223	641,725	1,485,948	8.4%
Federal	902,226	335,705	1,237,931	7.0%
Not-for-Profit	750,795	289,223	1,040,018	5.9%
Provincial	110,000	30,500	140,500	0.8%
<b>Total</b>	<b>12,877,682</b>	<b>4,735,792</b>	<b>17,613,474</b>	<b>100.0%</b>

\* Includes cash and in-kind contributions

## Network Participants 2009-2010

### Researchers

Name	Affiliation
Keith Seifert	Agriculture & Agri-Food Canada
Mary Allen	Allergy Asthma Information Association
Matthew Nisbet	American University
Marilyn Allen	Anaphylaxis Canada
Laurie Harada	Anaphylaxis Canada
Claire Dufresne	Association québécoise des allergies alimentaires
Christine Hampson	Asthma Society of Canada
Wendy Untereiner	Brandon University
David Scheifele	British Columbia Children's Hospital
Francine Deschesnes	Centre hospitalier de l'Université Laval
Maïke Pincus	Charité-University Medicine Berlin
Ulrich Wahn	Charité-University Medicine Berlin
Tong-Jun Lin	Dalhousie University
Jean Marshall	Dalhousie University
Susan Sherwin	Dalhousie University
Wade Watson	Dalhousie University
Jeffrey Brook	Environment Canada
Marjan Kerkhof	Groningen University
Gerard Koppelman	Groningen University
Salim Yusuf	Hamilton General Hospital/McMaster University
Diane Gold	Harvard University
Petros Koutrakis	Harvard University
Sheila Dubois	Health Canada
Samuel Godefrey	Health Canada
Ling Liu	Health Canada
John Salminen	Health Canada
Hari Vijay	Health Canada
Eric Meslin	Indiana University
Gianna Moscato	Instituto Scientifico di Pavia
Göran Pershagen	Karolinska Institutet
Barbro Dahlén	Karolinska Institutet
Sven-Erik Dahlén	Karolinska Institutet
Janice Minard	Kingston General Hospital
Jennifer Olajos-Clow	Kingston General Hospital
Qutayba Hamid	McGill University
Claire Infante-Rivard	McGill University
James Martin	McGill University
Bruce Mazer	McGill University

Name	Affiliation
Reza Alizadehfar	McGill University Health Centre
Ann Clarke	McGill University Health Centre
Lawrence Joseph	McGill University Health Centre
Faige Kaplan	McGill University Health Centre
Marie-Noel Primeau	McGill University Health Centre
Petra Arck	McMaster University
Stephanie Atkinson	McMaster University
John Bienenstock	McMaster University
Lisa Colizza	McMaster University
Michael Cyr	McMaster University
Judah Denburg	McMaster University
Paul Forsythe	McMaster University
Andreas Freitag	McMaster University
Jack Gauldie	McMaster University
Gail Gauvreau	McMaster University
Ted Haines	McMaster University
Geoffrey Hall	McMaster University
Mark Inman	McMaster University
Manel Jordana	McMaster University
Paul Keith	McMaster University
Tulay Koru-Sengul	McMaster University
Mark Larché	McMaster University
Anthony Levinson	McMaster University
Kathy McCoy	McMaster University
Ann McKibbin	McMaster University
Margaret McKinnon	McMaster University
Parameswaran Nair	McMaster University
Paul O'Byrne	McMaster University
Malcolm Sears	McMaster University
Roma Sehmi	McMaster University
Claudio Soares	McMaster University
Martin Stämpfli	McMaster University
Koon Teo	McMaster University
Susan Wasserman	McMaster University
Zhou Xing	McMaster University
Francine Ducharme	Montreal Children's Hospital
Shashank Sheth	Montreal General Hospital
Noe Zamel	Mount Sinai Hospital, Toronto

<b>Name</b>	<b>Affiliation</b>
Scott Sicherer	Mount Sinai School of Medicine
Juan Rivera	National Institutes of Health (USA)
Janice Butler	Newfoundland and Labrador Centre for Health Research
Rhoda Kagan	North York General Hospital
Stacey Ritz	Northern Ontario School of Medicine
Zacharias Suntres	Northern Ontario School of Medicine
Jane Kaye	Oxford University
Cindy Nakatsu	Purdue University
Roger Deeley	Queen's University
Diane Loughheed	Queen's University
John McCans	Queen's University
Jodan Ratz	Queen's University
Ryan Allen	Simon Fraser University
Tim Takaro	Simon Fraser University
Alan James	Sir Charles Gairdner Hospital, Western Australia
Bill Musk	Sir Charles Gairdner Hospital, Western Australia
Richard Summerbell	Sporometrics Inc.
Swarnarekha Bhat	St. John's Research Institute, India
George D'Souza	St. John's Research Institute, India
Anura Kurpad	St. John's Research Institute, India
Sumithra Muthayya	St. John's Research Institute, India
John Kenneth Philip	St. John's Research Institute, India
Sylvan Rego	St. John's Research Institute, India
K Srinivasan	St. John's Research Institute, India
Mario Vaz	St. John's Research Institute, India
Michael Ward	St. Michael's Hospital/University of Toronto
Dorothy Linn Holness	St. Michael's Hospital/University of Toronto
Sharon Dell	The Hospital for Sick Children (Toronto)
Martin Post	The Hospital for Sick Children (Toronto)
Felix Ratjen	The Hospital for Sick Children (Toronto)
Padmaja Subbarao	The Hospital for Sick Children (Toronto)
Teresa To	The Hospital for Sick Children (Toronto)
Wendy Ungar	The Hospital for Sick Children (Toronto)
Lucie Blais	Université de Montréal
Guy Delespesse	Université de Montréal
Bartha Knopper	Université de Montréal
Jean-Pierre Lavoie	Université de Montréal

<b>Name</b>	<b>Affiliation</b>
Jacques Lussier	Université de Montréal
Catherine Laprise	Université du Québec à Chicoutimi
Louis-Philippe Boulet	Université Laval
Jamila Chakir	Université Laval
Darryl Adamko	University of Alberta
Jeremy Beach	University of Alberta
Dean Befus	University of Alberta
Igor Burstyn	University of Alberta
Lisa Cameron	University of Alberta
Timothy Caulfield	University of Alberta
Nicola Cherry	University of Alberta
Marek Duszyk	University of Alberta
Gary Eitzen	University of Alberta
Warren Finlay	University of Alberta
Philip Halloran	University of Alberta
Paige Lacy	University of Alberta
Piush Mandhane	University of Alberta
Tom Marrie	University of Alberta
Irvin Mayers	University of Alberta
Shawna McGhan	University of Alberta
Devidas Menon	University of Alberta
Susan Moisey	University of Alberta
Redwan Moqbel	University of Alberta
Brian Rowe	University of Alberta
Sirish Shah	University of Alberta
Miriam Stewart	University of Alberta
Brian Sykes	University of Alberta
Timothy Vander Leek	University of Alberta
Dilini Vethanayagam	University of Alberta
Harissios Vliagoftis	University of Alberta
John Henderson	University of Bristol
Rafeef Abugharbieh	University of British Columbia
Jehannine Austin	University of British Columbia
Tony Bai	University of British Columbia
Michael Brauer	University of British Columbia
Ryan Brinkman	University of British Columbia
Chris Carlsten	University of British Columbia
Edith Chen	University of British Columbia

<b>Name</b>	<b>Affiliation</b>
Moira Chen Yeung	University of British Columbia
Denise Daley	University of British Columbia
Delbert Dorscheid	University of British Columbia
Mark FitzGerald	University of British Columbia
Richard Hegele	University of British Columbia
Darryl Knight	University of British Columbia
Michael Kobor	University of British Columbia
Tobias Kollmann	University of British Columbia
Michael MacDonald	University of British Columbia
Carlo Marra	University of British Columbia
Jeff Masuda	University of British Columbia
Kelly McNagny	University of British Columbia
Gregory Miller	University of British Columbia
Peter Paré	University of British Columbia
Tom Pfeifer	University of British Columbia
Andrew Sandford	University of British Columbia
Bob Schellenberg	University of British Columbia
Chun Seow	University of British Columbia
Donald Stark	University of British Columbia
Scott Tebbutt	University of British Columbia
Stuart Turvey	University of British Columbia
Stephan van Eeden	University of British Columbia
William Welch	University of British Columbia
Mark Wilkinson	University of British Columbia
Ruben Zamar	University of British Columbia
Robert Cowie	University of Calgary
Joe Davison	University of Calgary
Stephen Field	University of Calgary
Margaret Kelly	University of Calgary
Paul Kubes	University of Calgary
Glenda MacQueen	University of Calgary
Ron Matheson	University of Calgary
Chris Mody	University of Calgary
Michael Jarrett	University of California
Bruce Wilkie	University of Guelph
Stephanie Ackerman	University of Illinois at Chicago
Adnan Custovic	University of Manchester
Allan Becker	University of Manitoba
Andrew Halayko	University of Manitoba

<b>Name</b>	<b>Affiliation</b>
Kent HayGlass	University of Manitoba
Anita Kozyrskyj	University of Manitoba
Brian MacNeil	University of Manitoba
Clare Ramsey	University of Manitoba
Elizabeth Sellers	University of Manitoba
Abdel Soussi Gounni	University of Manitoba
Ganesh Srinivasan	University of Manitoba
Nicole Letourneau	University of New Brunswick
Neil Alexis	University of North Carolina at Chapel Hill
Eric Crighton	University of Ottawa
Donald Cockcroft	University of Saskatchewan
John Gordon	University of Saskatchewan
Margaret Otlowski	University of Tasmania
Lisa Cicutto	University of Toronto
Hartmut Grasemann	University of Toronto
D. Linn Holness	University of Toronto
Irena Kudla	University of Toronto
Wendy Lou	University of Toronto
Jeremy Scott	University of Toronto
James Scott	University of Toronto
Frances Silverman	University of Toronto
Susan Tarlo	University of Toronto
Ross Upshur	University of Toronto
Peter Vadas	University of Toronto
Susan Watt	University of Toronto
C. Wilson	University of Waterloo
Susan Elliott	University of Waterloo (previously at McMaster University)
Patrick Holt	University of Western Australia, Telethon Institute of Child Health Research
Susan Prescott	University of Western Australia, Telethon Institute of Child Health Research
Peter Sly	University of Western Australia, Telethon Institute of Child Health Research
Nigel Paterson	University of Western Ontario
Bert Brunekreef	Utrecht University
Kevin Mardell	West Elgin Community Health Centre, Ontario
John Bielby	Western Australia Centre of Pathology and Medicine



### Researchers by university

Network researchers by university	N	%
Brandon University	1	0.60%
Dalhousie University	4	2.50%
McGill University	9	5.70%
McMaster University	30	19.10%
Queen's University	3	1.90%
Simon Fraser University	2	1.30%
Université de Montréal	6	3.80%
Université du Québec à Chicoutimi	1	0.60%
Université Laval	2	1.30%
University of Alberta	24	15.30%
University of British Columbia	31	19.70%
University of Calgary	6	3.80%
University of Guelph	1	0.60%
University of Manitoba	9	5.70%
University of New Brunswick	1	0.60%
University of Ottawa	1	0.60%
University of Saskatchewan	2	1.30%
University of Toronto	21	13.40%
University of Waterloo	1	0.60%
University of Western Ontario	2	1.30%
<b>Subtotal</b>	<b>157</b>	<b>100%</b>
International Network collaborators	N	%
American University	1	4.2%
Charité-University Medicine Berlin	2	8.3%
Groningen University	2	8.3%
Harvard University	2	8.3%
Indiana University	1	4.2%
Mt. Sinai School of Medicine	1	4.2%
Purdue University	1	4.2%
University of Bristol	1	4.2%
University of California	1	4.2%
University of Manchester	1	4.2%
University of Illinois at Chicago	1	4.2%
University of North Carolina at Chapel Hill	1	4.2%
University of Oxford	1	4.2%
University of Tasmania	1	4.2%
University of Western Australia	6	25.0%
Utrecht University	1	4.2%
<b>Subtotal</b>	<b>24</b>	<b>100%</b>
<b>Grand Total</b>	<b>181</b>	<b>100%</b>

\* Represents all ongoing AllerGen projects as of March 31, 2010.

### Highly Qualified Personnel/Trainees

Zainab Abdurrahman	Evelyne Blouin
Farnam Ajamian	Andrew Boshara
Loubna Akhabir	Valérie Bougault
Umme Akhtar	Lisa Bourque
Amal Al-Garawi	Jean-Nicolas Boursiquot
Ayham Al Afif	Meaghan Brown
Salman Ali	Christian Bruenahl
Zoulfia Allakhverdi	Sarah Burke
Sima Allahverdian	Laura Butler
Sarah Alley	Francesca Caldwell
Menhel Al-Naama	Pierre Camateros
Hajera Amatullah	Eduardo Campos Alberto
Reshma Amin	Lei Cao
Ofer Amram	Guillaume Carle
Sharon Anderson	Lucas Castellani
Katherine Arias	Sri Chaudhuri
Narcy Arizmendi	Dennis Cho
Victoria Arrandale	Bonnie Chow
Yuka Asai	Derek K. Chu
Melanie Ashby	Tatiana de Moura Coelho
Ilan Asher	Daniel Cohen
Adrian Baatjes	Mathieu Cooney
Salma Bahreinian	Nathan Corbett
Kendra Barrick	Beth Davis
Jessica Barron	Annick Des Cormiers
Tahira Batool	Renée Douville
Philippe Bégin	Lisa Dreger
Jason Behrmann	Benny Dua
Glenda Bendiak	Marie-Eve Ducharme
Jami Bennett	Agnes Eder
Moshe Ben-Shoshan	Emily Elliott
Rohit Bhargavan	George Ellis
Sacha Bhinder	Emily Escaravage
Marie Renée Blanchet	George Farjou

Nancy Fenton	Shelley Holland	William Li	Tyler Pittman	Amir Tashakkor
Kristin Flader	Doug Houlbrook	Yuriy Lissitsyn	Sophie Plante	Amudhinie Thanendran
Joe Fragapane	Hao (Henry) Huang	Alba Llop-Guevara	Giuseppe Pontoriero	Sara Thunberg
Ian Frankish	Michael Hughes	Daniela Loeffler	David Préfontaine	Candice Todd
Kathleen M. Fraser	Claudia Hui	Larisa Lotoski	Jennifer Protudjer	Vanessa Tremblay-
Erin Frohwerk	Tyler Hynes	Mark Loewen	Mandy Pui	Vaillancourt
Calvin Fung	Haruki Imaoka	Lionel Loubaki	Pia Reece	Candy Tsang
Irene Fung	Ramses Ilarraza	Elaina MacIntyre	Marcos Ribeiro	Matthew Tunis
Sylvianne Gagnon	Yuji Ishimatsu	Emily Maclean	Johanna Roa	Julie Turmel
Agustina Gancia-Godoy	Alisha Jabar	Stephanie Macpherson	Natalia Rodrigues	Bruce Urch
Nicole Garzia	Caitlin Jago	Ruth MacRedmond	Winnie Sao	Rattanjeet Vig
Émilie Gélinas-Lymburner	Nelishah Jiwani	Randy McDonald	Erik Saude	Ava Vila
Kim Gilbert	Sarah Kam	Steven Maltby	Natalija Saurek-	Cristina Villa-Roel
Harpreet Gill	Harutai Kamalaporn	David Marchant	Aleksandrovska	Thea Van Rossum
Kulvinder Gill	Cynthia Kanagaratham	Rafael Marino	Lauren Segal	Samuel Wadsworth
Ashley Gluchowski	Nala Kandiah	Andrea Marrin	Charis Segeritz	Hope Walker
Matt Gold	Nitin Kapur	Nico Marr	Shaun Selcer	Rongrong Wang
Pol Gomez	Khalil Karimi	Amir Hossaine Massoud	Pawan Sharma	Kristin Weiße
Loie Goronfolah	Michael Kariwo	Brianne Miller	Heather Sharpe	Jim Wickware
Karine Guerin Montpetit	Colleen Keast	Troy Mitchell	David Shih	Lian Willetts
Derek Haaland	Elaine Keung	Karim Mitha	Parisa Shosharti	Gabriella Wojewodka
Tillie-Louise Hackett	Ibrahim Khambati	Katherine Morris	Huan Shu	Jungang Xie
Jamie Haddon	Nivedita Khanna	Rabyah Murji	Elinor Simons	Sophia Xu
Oumnia Hajoui	Katie Killorn	Natalia Mykhaylova	Gurpreet K. Singhera	Lauren Yallop
Christian Harrington	John Dongil Klm	Nha Nguyen Luu	Dave Sirois-Gagnon	Howard Yan
Daniel Harrington	Vy Kim	Michelle North	Christopher Skappak	Jasemine Yang
Isabel Hartwig	Linda Kirste	Sharon Oldford	Steve Smith	Aaron Young
Yavuz Havlucu	Megan Knoll	Mostafa Osman	Maria Emilia Solano	Ricardo Zamel
Jianqing He	Tedd Konya	Amanda Ottley	Lianne Soller	Caleb C.J. Zavitz
Heather Henley	Marie-Helene Lambert	Benjamin Patchell	Kristin Stawiarski	Jian Zhang
Darcy Heron	Émilie Lanctôt-Setlawkwe	Angela Paulson	Andrew Steer	Mark Zhou
Jeremy Hirota	Anouk Lavoie-Lamoureux	Miki Peer	Dorota Stefanowicz	Steven Zuccarelli
Alison Hirukawa	Mathilde Leclère	Cheryl Peters	Guy Tal	
Ryan Hoeve	Jeremy Levi	Sintra Phumethum	Anthony Tang	
Jeff Hogan	Ilan Levy	Tracy Pitt	Christopher Taplin	

**Research Associated and Technicians**

Linda Armstrong-Edwards	Russ Ellis	Barbara Karlen	Christina Neville	Bruce Thong
Eshetu Atenafu	Jan Falcone	Tosha Kells	Erin Nicholls	Caroline Tremblay
Susan Balkovec	Mike Fila	Amy Kwan	Geraldine Nicol	Ben Tripp
Graham Barr	Alexandra Fok	Erika Ladouceur	George Obminski	Elizabeth Turnbull
Riva Bendit	Amelie Forget	Salma Lalji	Linda O'Connor	Marie-Pierre Viau
Mylène Bertrand	Edgardo Fortuno III	Ann Sofie Lantz	Megan O'Connor	Hélène Villeneuve
Agatha Blancas	Valerie Garcia	Sara Leckie	Popi Panaritis	Michelle Vine
Darren Blimkie	Brenda Gerwing	Louise Lee	Julie Park	Vicki Waddingham
Marie-Eve Boulay	Lucy Gofton	Amanda Lee	Gabriel Pépin	Tina Walker
John Bousfield	Susanna Goncharova	Diana Lefebvre	Boris Perelman	Terry Walker
Bing Cai	Justina Greene	Josiane Lefebvre-Lavoie	Marcelle Petitclerc	Xiu Yu Wang
Heather Campbell	Leah Greene	Johane Lepage	Chandra Pham	Ruth Warren
Nancy Chase	Rajdip Grewal	Bruce Lix	Kerry-Ann Porter	Richard Watson
Heidi Cheung	Maja Grubisic	Ingrid Loewen	Philippe Prince	Jennifer Wattie
Rishma Chooniedass	Pampa Guha	Angélique Longtin	Christen Rachul	Kristin Westland
Laura Clark	Agneta Gulich	Sherry Lu	Sanjay Ramachandran	Rebecca Wickett
Sébastien Claveau	Erika Haber	Karl Zdravko Lukic	Nadia Rampersad	Lesley Wiltshire
Miriam Clément	Anita Hall	Jing Luo	Shana Regush	Nathalie Y
Lindsey Colley	Fay Hart	Merideth MacKenzie	Denise Reid	Rossitta Yung
Mary Conway	Carrie Hartman	Deborah MacNiel	Nola Ries	David Zamar
Marg Coote	Matthew Hartman	Pat MacPherson	Isha Rivera	Lori Zbytnuik
Mahtab Davari	Ryan Hartman	Dennell Mah	Roxanne Rousseau	Xiaobei Zhang
Pearl Davis	Stephanie Harvard	Iqbal Mahabood	Jian Ruan	
Wojciech Dawicki	Michael Henderson	Edward Makwarimba	Heinz Schultz	
René Dery	Delia Heroux	Peter Mastrangelo	Linda Sellery	
Francine Deschesnes	Aaron Hirschfeld	Janice Menzies	Shahjereen Shahidullah	
Susan Donnelly	Jennifer Hogg	Helen Merkens	Mary Speck	
James Dooley	Karen Howie	Joanne Milot	Chris St. Laurent	
Suzanne Dostaler	Linda Hui	Crystal Mitchell	Yvan St. Pierre	
Wenming Duan	Robyn Hyde-Lay	Hanèn M'Kaouar	Lisa Steacy	
Joanne Duncan	Kay Jiang	Taka Murakami	Tara Strinich	
Judy Durocher	Brianna Julien	Karen Murphy	Jasmen Sze	
Anne Dybuncio	Ursula Kadela	Mehdi Najafzadeh	Jenny Thiele	
Marianne Eduards	Arlene Kallos	Sarah Neuman	Francis Thomai	

## Board of Directors

Graham Scott	Chairman of the Board; CEO, Graham Scott Strategies Inc.
Claude Roy	Vice-Chairman of the Board; Gastroenterologist and Professor Emeritus, Hôpital Ste-Justine
Judah Denburg	Scientific Director and CEO, AllerGen NCE Inc.
Douglas Barber	Distinguished Professor in Residence, Faculty of Engineering, McMaster University
Howard Bergman	Vice-President and Scientific Director, Fonds de la recherche en santé du Québec
Mark Bisby	Consultant
Zave Chad	Allergist and Clinical Immunologist
Deborah Danoff	Adjunct Professor, Department of Medicine, University of Ottawa
Kevin Fehr	Director, R&D Alliances, GlaxoSmithKline Inc.
Gail Gauvreau	Associate Professor, McMaster University
Peter George	President, McMaster University
Christine Hampson	President and CEO, The Asthma Society of Canada
Eric Leith	Chair, Canadian Allergy, Asthma and Immunology Foundation; Allergist and Immunologist
Elinor Wilson	President and CEO, Assisted Human Reproduction Canada
Tia Moffat	Senior Program Manager, NCE Program, <i>ex-officio</i>
Jennifer Protudjer	President, AllerGen Student and New Professionals Network (ASNPN), <i>ex-officio</i>
Diana Royce	Managing Director and COO, AllerGen NCE Inc., <i>ex-officio</i>

### Research Management Committee (RMC) Membership

Allan Becker	Professor, University of Manitoba
Dean Befus	Professor, University of Alberta
Jeffrey Brook	Professor, University of Toronto; Senior Scientist, Air Quality Research Branch, Environment Canada
Tim Caulfield	Research Director, Health Law Institute, University of Alberta
Judah Denburg	Chair, Scientific Director and CEO, AllerGen NCE Inc.
Susan Elliott	Professor and Dean, University of Waterloo
Patricia Lorenz	President, Sedulous Investments
Paul O'Byrne	Professor and Chair of Medicine, McMaster University
Peter Paré	Professor, University of British Columbia
David Prefontaine	Vice President, AllerGen Student and New Professional Network (ASNPN)
Mark Raizenne	Director General, Public Health Agency of Canada
Malcolm Sears	Professor, McMaster University
David Shindler	Executive Director, BioDiscovery Toronto (Inc.)
Brian Underdown	Managing Director, Lumira Capital
Tia Moffat	Senior Program Manager, Networks of Centres of Excellence ( <i>ex officio</i> )
Diana Royce	Managing Director and COO, AllerGen NCE Inc. ( <i>ex officio</i> )

### Network-Supported Intellectual Property (NSIP) Advisory Committee Membership

Dean Befus	Professor, University of Alberta
Terry Delovitch	Senior Scientist, Robarts Research Institute
Judah Denburg	Scientific Director and CEO, AllerGen NCE Inc.
John-Paul Heale	Associate Director, University of British Columbia
Patricia Lorenz	President, Sedulous Investments



## Board of Directors



**Graham Scott, C.M., Q.C.**  
Toronto, ON



**Claude Roy, MD, FRCP(C)**  
Montreal, QC



**Judah Denburg, MD, FRCP(C)**  
Hamilton, ON



**Douglas Barber, PhD**  
Hamilton, ON



**Howard Bergman, MD, FRCP(C)**  
Montreal, QC



**Mark Bisby, DPhil**  
Ottawa, ON



**Zave Chad, MD, FRCP(C)**  
Ottawa, ON



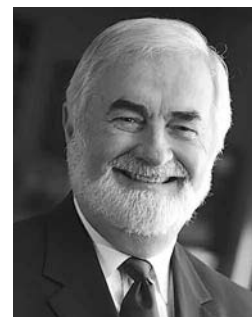
**Deborah Danoff, MD, FRCP(C)**  
Ottawa, ON



**Kevin Fehr, PhD**  
Toronto, ON



**Gail Gauvreau, PhD**  
Hamilton, ON



**Peter George, CM, O.Ont**  
Hamilton, ON



**Christine Hampson, PhD**  
Toronto, ON



**Eric Leith, MD, FRCP(C)**  
Oakville, ON



**Elinor Wilson, PhD**  
Ottawa, ON



**Tia Moffat, PhD**  
Ottawa, ON



**Jennifer Protudjer, MSc**  
Winnipeg, MB



**Diana Royce, EdD**  
Hamilton, ON

Diana Royce Chair, Managing Director and COO,  
AllerGen NCE Inc.

Brian Underdown Managing Director, Lumira Capital

Danuta Radzioch  
Susan Waserman  
Diana Royce

Montreal General Hospital  
McMaster University  
AllerGen NCE Inc., *ex officio*

#### **Policy, Ethics, Law and Society (PELS) Committee Membership**

Michael Abbott Program Manager, Health Canada

Tim Caulfield Research Director, Health Law Institute,  
University of Alberta (Chair)

Lisa Cicutto Associate Professor, University of Toronto

Susan Elliott Professor and Dean, University of Waterloo

Alina Gildiner Assistant Professor, McMaster University

Samuel Godefroy Director General, Health Canada

Christine Hampson President and CEO,  
The Asthma Society of Canada

Anthony Levinson Associate Professor, McMaster University

Diane Loughheed Professor, Queen's University

Mark Raizenne Director General, Public Health Agency of Canada

Diana Royce Managing Director and COO, AllerGen NCE Inc.

Elinor Wilson President and CEO, Assisted Human  
Reproduction Canada

#### **Advanced Education and Training Opportunities Advisory Committee (AETOAC) Membership**

Thomas Issekutz Dalhousie University

Oxana Latycheva The Asthma Society of Canada

Irvin Mayers University of Alberta

Chris Mody University of Calgary (Chair)

Michelle North University of Toronto & President, ASNPN

Jennifer Protudjer President, AllerGen Student and  
New Professionals Network (ASNPN)

#### **AllerGen Student and New Professionals Network (ASNPN) Executive**

President Jennifer Protudjer, University of Manitoba

Vice-President David Préfontaine, McGill University

Past-President Michelle North, University of Toronto

Secretary/Treasurer Umme Akhtar, University of Toronto

Regional Director, Ontario Victoria Arrandale, University of Toronto

Regional Director,  
Quebec/Atlantic Lianne Soller, McGill University

Regional Director,  
Pacific West Central Steven Maltby, University of British Columbia

Events/Communications Kathleen Fraser, Queen's University

#### **Administrative Centre**

Judah Denburg Scientific Director and CEO

Diana Royce Managing Director and COO

Mark Mitchell Manager, Research and Partnerships

Jordan Moore Manager, Communications

Liz Dzaman Executive Assistant and Corporate Secretary

Anne Painter Finance Officer

Melissa Shuker Programme Coordinator

Maggie Civak Research Coordinator

Kim Westmoreland Administrative Assistant



*Aussi disponible en français*

**AllerGen NCE Inc.**

McMaster University

Michael DeGroote Centre for Learning & Discovery

1200 Main Street West, Room 3120

Hamilton, ON L8N 3Z5

Telephone: (905) 525-9140 ext. 26502

Fax: (905) 524-0611

E-mail: [info@allergen-nce.ca](mailto:info@allergen-nce.ca)

**[www.allergen-nce.ca](http://www.allergen-nce.ca)**



Networks of Centres of Excellence