

AllerGen Researcher Impact Statements

PROGRAMME A: GENE-ENVIRONMENT INTERACTIONS

Malcolm R. Sears MB, ChB, FRACP, FRCPC, FAAAAI, Professor, Division of Respiriology, McMaster University, Hamilton, Ontario, PI, Programme A, AllerGen Project 07A7: *The Canadian Healthy Infant Longitudinal Development (CHILD) Study*

The development of the AllerGen NCE has brought together a multifaceted group of investigators from across Canada with international connections which have provided a rich environment in which to develop one of the major programs of the NCE, the asthma and allergy birth cohort titled The Canadian Healthy Infant Longitudinal Development (CHILD) Study. While a small birth cohort was under consideration at McMaster University based on previous findings from a New Zealand cohort and specific interests of a few investigators in looking at early life exposures and infant pulmonary function testing, this would never have evolved into the scale and scope of the CHILD study without the AllerGen Network of investigators. There has been a strong sense of collaboration and enthusiasm and yet individual expressions of interest in components of the birth cohort study which augers well for its long term success. As the principal investigator of this study, the support of the AllerGen Network is far greater than the monetary contribution, although the commitment of \$1M per year for six years is certainly greatly appreciated, being currently fifty percent of the committed funding, without which we could not have commenced the study. However, the even greater strength of the AllerGen Network is the scientific expertise and multidisciplinary interactions which it has fostered which will allow the CHILD study to actively explore components of the development of allergy and asthma ranging from allergen exposures through air pollutants through psychosocial stress factors through early childhood infections as well as infant pulmonary function development. The AllerGen Network has enabled me to contact people that otherwise would have been relatively unknown to me, and has given each of the investigators a focal point to establish participation in what will be one of the key outcomes of the AllerGen NCE.

Denise Daley, PhD, University of British Columbia, Vancouver, BC, PI, Programme A, AllerGen Project 07A2: *Develop and implement an allergen-gene environment database resource*; AllerGen Project 07A6: Postpartum distress and childhood asthma

What benefits the NCE program has provided you?

- 1) The NCE has established a network of investigators across Canada. AllerGen has united researchers, spurred research and interdisciplinary studies, and allowed AllerGen investigators to leverage assets and resources as a group rather than smaller individual studies. As a result AllerGen is involved in several international partnerships and is participating in studies with both the Gabriel Consortium (mainly European studies) and investigators in the US. This has been a powerful demonstration of the value of networking and collaboration.
- 2) Participating in the AllerGen NCE has exposed me to other investigators in my institution and across the country with similar interests and research. Because of AllerGen, I have a network of investigators to replicate findings, expand the scope and breath of my research, and explore new hypotheses. As a new investigator I feel that this is an enormous resource.
- 3) As a junior investigator I find the collaboration provides me with both mentorship from senior investigators and a network of junior investigators that I will collaborate with for years to come. To have both is tremendously valuable.

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Padmaja Subbarao, MD, MSc, FRCP(C), Assistant Professor, Department of Paediatrics, University of Toronto, Toronto, Ontario, Programme A, PI, AllerGen Project 07A1.2: Development of objective measurement of airway inflammation and lung function in infants; AllerGen Project 07A7: The Canadian Healthy Infant Longitudinal Development (CHILD) Study

"The development of the AllerGen NCE has enabled the pursuit of high-risk but high yield protocols. It is only with the funding available through these programmes that we have been able to bring novel technology to Canada such as exhaled breath condensate experiments in infants, and the development of novel techniques such as multiple breath washout in infants. These studies are expensive and risky but if successful have the potential to revolutionize how we think of and treat asthma in our youngest most vulnerable patients.

It is also due to the success of the AllerGen network that we have had the opportunity network with investigators across the country and to work more closely with government - Kingsbridge meetings, Health Canada and CIHR workshops to bring the CHILD birth cohort study to fruition. The funding landscape before the initiation of the AllerGen network made it difficult to foresee the possibility of such a large-scale comprehensive asthma and allergy study in Canada. Due to this study we are poised to enter the world stage in the understanding of pediatric wheezing disorders and their pathogenesis."

Scott J. Tebbutt, PhD, Assistant Professor, Department of Medicine, University of British Columbia, The James Hogg iCAPTURE Centre for Cardiovascular and Pulmonary Research, Vancouver, BC, Programme A, PI, AllerGen Project 07A1.3: Genetics: AllerChip: Development, validation and implementation of a microarray genotyping tool for allergy and asthma research; AllerGen Project 07A4: Development of a microarray genotyping chip for clinical trials; AllerGen Project 07AS1: AllerGen Animations

My research program has been significantly enhanced through AllerGen NCE. Prior to joining the AllerGen network, I was funded by the National Sanitarium Association to develop fast and extremely accurate genetic diagnostic technology. Through AllerGen, my research group was able to network with Dr. Tom Hudson's Genome Quebec group, obtaining HapMap data and Coriell DNA samples with which to test our technology against leading industry standards. This resulted in several peer-reviewed publications describing our methods, and showing that our technology is the most robust and accurate of any medium throughput genotyping platform available. Based on this, I have been able to form collaborations with other AllerGen investigators across Canada, most notably the Clinical Investigator Collaborative (CIC). Using our genetic technology, I am working with the CIC to help bring pharmacogenetic capacity to their clinical trial studies of new pharmacological agents that may be useful in treating asthma.

Tobias Kollmann, MD, PhD, Assistant Professor, Infectious & Immunological Diseases, University of British Columbia, Vancouver, BC, Programme A/Programme B, PI, AllerGen Project 07A1.1: Mini-CHILD Recruitment; AllerGen Project 07B2.2: Ontogeny and genetic polymorphisms of the innate immune system intersecting in atopy

The best analogy to describe the impact support from Allergen NCE had on my group's research is: Anabolic Steroids!

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Through networking at the annual conventions, phone conference calls, and personal interactions, at least 5 different collaborations have developed – all of which are bearing fruit (see below)

2. Their financial support of the mini-CHILD pilot project has enabled us to develop, test & verify standard operating procedures (SOPs) building the necessary platform to investigate the role of the innate immune system in health and disease. This has already led to one publication of the method, with many more manuscripts and grant applications in the making describing and building on the results
3. Through an Allergen co-sponsored collaboration with Dr. Scott Tebutt (UBC) we are determining the role of genetic polymorphisms in key innate signaling pathways in human infant vaccine responses. This has become a central issue for groups across the globe – and we are leading the effort. The analysis is not yet completed, but already future grant applications are being prepared
4. This Allergen NCE supported high-throughput innate immune analysis platform has allowed us to provide the nationwide CHILD birth cohort study with the means to conduct this thousands of samples. The data generated will surely lead to many important insights, publications, and significant further funding & training opportunities
5. We are in the process of leveraging the Allergen NCE supported CHILD cohort for global cross-cohort comparative studies with a cohort in South African, determining the role of the developing human infant gut microbiome in asthma and allergy. This is in only the initial stages of a Genome BC application, with the prospect of significant additional funding and support for training of future scientists.

This 'explosion' of productivity, opportunity and support has not only resulted from direct contacts through and funding from Allergen, but also through leveraging Allergen NCE funding support with other agencies, e.g. the NIH.

Rick Hegele, MD, PhD, Professor and Head, Pathology & Laboratory Medicine, University of British Columbia, The James Hogg iCAPTURE Centre for Cardiovascular and Pulmonary Research, Programme B, AllerGen Project 06B4.2: *Environmental impact on the epithelial immune barrier in asthma*

The AllerGen NCE has provided a timely and much needed opportunity to engage locally and nationally with like-minded colleagues who seek new synergies for accelerating knowledge creation and translation related to asthma and allergy. AllerGen's strategic partnerships have resulted in the creation of new research funding streams that has allowed for leveraging of further funding and support. As one representative example, the AllerGen-CIHR partnership in Respiratory Mucosal Immunity allowed for the creation of a multi-disciplinary group at the James Hogg iCAPTURE Centre for Cardiovascular and Pulmonary Research at St. Paul's Hospital, Vancouver, in which highly integrated, mechanistic studies on the role of the airway epithelial barrier to environmental exposures (e.g., viruses, air pollution) in asthma have resulted in incredible new understanding and suggest potential future directions for novel clinical intervention. This particular project has involved post-doctoral fellows who have obtained competitive salary support through such mechanisms as the IMPACT Program, indicative of effective leveraging. As a second example, AllerGen's enabling role in the Canadian Healthy Infant Longitudinal Development (CHILD) Study spawned the creation of a British Columbia-based initiative, "mini-CHILD", funded by the Michael Smith Foundation for Health Research.

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mini-CHILD has allowed for piloting of key aspects of CHILD (to include a national birth cohort of 5,000), including recruitment, sampling, questionnaires, technology utilization, etc., to inform decision-making and policy/procedures for the national birth cohort.

In summary, AllerGen is about people, AllerGen is about partnerships, AllerGen is about creativity, AllerGen is about enabling great things to happen.

Thank you for the opportunity to comment on the impact of AllerGen to my work.

Clare Ramsey, MS, MD, Assistant Professor, University of Manitoba, Winnipeg, Manitoba, Programme A, AllerGen Project 07A7: The Canadian Healthy Infant Longitudinal Development (CHILD) Study

My main value I have gained from being part of the Allergen network is the collaboration that it has allowed me to be a part of as a researcher just starting off my career. The network has allowed me to learn from and establish connection with researcher from multiple different fields and different part of Canada. It has opened my eyes to the impact this type of collaboration can have on developing important multidisciplinary, multicenter studies such as CHILD. Being part of the Allergen Network has certainly allowed some our research projects in Winnipeg to branch into the field of genetics with collaboration with genetic experts in Vancouver and therefore enhance the quality of projects.

Dr. James Scott, PhD, ARMCCM, Assistant Professor, Occupational & Environmental Health, Dalla Lana School of Public Health, University of Toronto, Programme A, AllerGen Project 07A1.7: Environmental assessment of molecular genetic characterization of microbes in outdoor and indoor air and dust; AllerGen Project 07A5: *Environmental effects on allergic airway disease*

I am writing as an AllerGen investigator to add my voice in strong support of the overwhelming success of AllerGen NCE in facilitating exciting, innovative and productive cross-disciplinary research on allergic disease.

I am a basic scientist/ microbial ecologist with strong academic interests in the measurement of exposure to environmental pollutants, particularly biological particles. Many such exposures are highly relevant to the development and exacerbation of allergic disease. Despite my disciplinary depth, until my involvement with AllerGen I had never engaged in collaborative research on these exposures to ask obvious but larger and more important questions of the sort that can only be addressed through the integration of basic and clinical sciences.

As a case in point, my current AllerGen funding supports the adaptation of molecular genetic methods previously used in soil ecology to characterize microbes in air and dust. While the application of these methods is novel, in isolation this research is reductive and technological. The real excitement and novelty of this research comes from its deep integration with other AllerGen projects that measure other exposures and assess the impact of all exposures by human health outcomes and animal models. Collectively, the value of these projects far exceeds the sum of their parts. This kind of research is only possible in the context of a vibrant and supportive research community.

My involvement with AllerGen NCE has fundamentally changed the way I do research and how I think about research. Through the network, I have immediate access to colleagues with diverse

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expertise but shared interests. AllerGen is a sandbox for us to explore big questions, and it is my pleasure to be part of it!

Tim K. Takaro, MD, MPH, MS., Associate Professor, Faculty Of Health Sciences, Simon Fraser University, Programme A, PI, AllerGen Project 07A1.5: *Mini-CHILD Environment – Assessment of Home Environment in Mini-CHILD*

This project has enabled the complex environmental assessment component of CHILD to be tested in the field and has taught us crucial lessons about how CHILD can succeed.

Our formal learning began with the CMHC training in Toronto Mar 10-13, 2008. A training manual based upon this workshop was produced and sent to Allergen June 30, 2008. General aspects of the protocol as outlined in the CHILD proposal have been approved and further supported by the Banff exposure workshop experts. The field tested 3 month visit Visual assessment/questionnaire has now been used for over 25 mini-CHILD families and is ready for the first CHILD home visits at the end of December. The dust collection, lab QA/QC and storage protocols have all been tested and used in these homes. We are able to collect adequate dust in 95% of homes, but some people insist upon cleaning their homes the day we arrive despite our phone entreaties to hold off vacuuming for several days prior to the visit. Reminder phone calls do not always work. We have tested three different heads for our vacuum sampler constructed by engineers at the University of Toronto. We may have a patentable product here as the heads appear to work well even on hard floors. This will be of some interest to indoor environment investigators world-wide.

The networking opportunities have been tremendous, and include an excellent international workshop on exposure assessment techniques at the AllerGen Banff meeting in February. In addition to a thorough endorsement of our approach to exposure assessment in CHILD we learned about new assessment techniques that can be piloted in CHILD. We have recently received Health Canada funding to pursue some of these leads. A manuscript has been drafted from the workshop. Our study protocols have caught the interest of the U.S. National Children's Study a birth cohort of 100,000 that offers outstanding collaborative opportunities for CHILD and of a South African cohort that is preparing to launch. In Vancouver, with the assistance of a Michael Smith Foundation Team grant, we have been developing new relationships with particulate chemists and respirologists that can help us better understand the inflammatory effects of home and consumer product exposures.

Anita Kozyrskyj, PhD, Associate Professor, Faculty of Pharmacy, University of Manitoba/ University of Alberta, Programme A, PI, AllerGen Project 07A6: *Postpartum distress and childhood asthma*; 07C6: *Stress, asthma and atopy socio-spatial investigations*

Programme A - CHILD study

I met James Scott at a few AllerGen meetings and then got to know more about his research at an AllerGen Highly Qualified Personnel (Trainee) workshop in 2006, at which we both presented on our career paths. Combining our expertise on genetic fingerprinting and database linkage studies, we have submitted an application to the CIHR Catalyst Grant competition to investigate the impact of antibiotic use in infants and their intestinal microflora in the CHILD study.

Programme A - genetics research

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I got to know Denise Daley (UBC) during the very early stages of AllerGen, I think during the time when the application for AllerGen was being put together. Since that time we have interacted regularly as part of the Theme One funded replication study on the genetic determinants of asthma. I have learned a lot about genetic epidemiology from Denise and recently, our interests in this area have expanded to questions on the ethics of studies on the genetics of postpartum depression and asthma. Recently, Denise and I received a CIHR grant to investigate these issues in the form of a web-based survey. Nicole Letourneau (University of New Brunswick), who leads a randomized controlled trial on maternal depression (whom I also met at an AllerGen Mind-Body workshop), is also a co-investigator on this study. The companion to this project, a study on the genetics of postpartum depression and asthma, was funded by AllerGen.

Programme A - maternal depression research

The first round applications for AllerGen required multi-disciplinary collaboration. So, I approached Brian MacNeil at the University of Manitoba, whose research was in the area of animal models of stress, to become a co-investigator for a proposal on the association between maternal distress and childhood asthma. He, I and several AllerGen investigators received AllerGen funding to pursue this database project and now have a publication in the American Journal of Respiratory and Critical Care Medicine that has received wide media attention. Also, thanks to Brian's expertise in performing cortisol level assays, we have completed a study which links database records on maternal depression with cortisol levels in children with and without asthma. This was Lisa Dreger's MSc thesis project for which she received a prize from the Canadian Psychological Association.

Programme C

The second round of AllerGen funding allowed me to pursue my research interests in the social determinants of health. I have partnered with Susan Elliott and another social scientist, Javier Mignone, on a project which will assess the influence of community-level measures of stress on maternal distress and the development of childhood asthma.

PROGRAMME B: DIAGNOSTICS AND THERAPEUTICS

Chris Carlsten, MD, PhD, Assistant Professor, Respiratory Division, Department of Medicine, University of British Columbia, Vancouver, BC, PI, Programme B, AllerGen Project 08BS11: *Development of a Human Phthalate Inhalation Exposure Model*

I joined AllerGen soon after my being recruited to Vancouver (UBC) in September 2007. Since that time, AllerGen has been a major source of support in my early establishment locally and nationally. This has occurred on several levels. Informally, several of the individuals with whom I consult on research matters are those whom I met via AllerGen. The AllerGen annual meeting in Banff was a particularly fruitful venue for such emerging contacts. Formally, I've been supported in 2 very tangible ways by AllerGen. First, through our grant to develop an inhalation model for phthalates in humans, a project that would likely be difficult to fund through more traditional routes, we are able to explore an extremely novel path of research. Second, through AllerGen's support of my participation in the GA2LEN respiratory genomics meeting, upcoming next month in France, I will be able to meet with international leaders in this discipline and to forward AllerGen's collaborations abroad.

Dr. Stuart Turvey, Assistant Professor, Division of Infectious and Immunological Diseases, BC Children's Hospital and Child & Family Research Institute, Vancouver, BC, PI, Programme A, AllerGen Project 07A1.1: *Mini-CHILD Recruitment*; AllerGen Project 05BS11: *Expansion of existing capacity of immunology platform to support Canadian Healthy Infant Longitudinal Development study (birth cohort)*

Participating in the AllerGen NCE has allowed me to become integrated in the Canadian research environment incredibly quickly. I came to Canada in July 2004 and involvement in AllerGen has made me feel truly part of the Canadian research community. Without AllerGen, this integration would have occurred much more slowly (if at all). This integration, catalyzed by the AllerGen network, has allowed us to develop a vibrant research cooperative here in British Columbia. Indeed, our integration and potential for success was acknowledged through the recent award of a 'Team Start-up Award' from the Michael Smith Foundation for Health Research.

Dr Guy Delespesse, MD, PhD, Professor of Medicine, University of Montreal and Laboratory for Allergy Research, Notre-Dame Hospital, PI, Programme B, AllerGen Project 08BS11: *Cross-talk between airway epithelial and CD34 Hemopoietic Progenitor Cells Mediated by TSLP and IL-33 in Asthmatic and Normal Individuals*

My nomination as a member and principal investigator of the AllerGen network had a significant impact on my research activities. First, it has allowed me to interact and initiate collaborative research projects with colleagues from all over Canada, Dr. P. Pare in British Columbia and Dr. J. Denburg and his team in Ontario. Through this strategic initiative we will exchange clinical materials and accomplish research protocols requiring different types of expertise. Finally, we have benefited from an award supporting most of the costs of this collaborative research.

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Dr. Jeremy Scott, PhD, Assistant Professor, Divisions of Occupational and Respiratory Medicine, Department of Medicine, Faculty of Medicine, University of Toronto, PI, Programme A, AllerGen Project 05A5: *Cardiopulmonary consequences of air pollution in a murine model of allergic asthma*; AllerGen Project 07B1: *The Canadian Group on Food Allergy Research (CanGoFAR)*

As a new faculty member starting at the University of Toronto at the same time as AllerGen was launched in Fall 2004, and looking to develop a research program focused on the effects of environmental pollutants on allergic airways disease, the establishment of this NCE has significantly accelerated my work in many distinct ways:

Firstly, and most obviously, funding from AllerGen is directly responsible for establishing and accelerating this aspect of my research program. This has in turn led to several key linkages for myself both within AllerGen and independent of AllerGen. Within AllerGen, as part of Programme A, I have been afforded the opportunity to network with many investigators across the nation. These connections have fostered many potential collaborations and facilitated the advance of current projects; when my trainees encounter difficulties in their projects, there is likely someone else within AllerGen and Programme A who has dealt with similar issues and can assist in overcoming any hurdles. The most significant external linkage is my initial association with the Southern Ontario Centre for Atmospheric Aerosol Research (SOCAAR), and at present my role in the SOCAAR Management Committee. SOCAAR has poised itself to be a centre for multidisciplinary research between the Faculties of Engineering, Chemistry and Medicine at the University of Toronto. We have consequently been able to attract funds from provincial and federal sources in support of further studies of the health effects of air pollution. This multidisciplinary group has recently submitted a CFI Leading-Edge Fund Proposal that will expand the SOCAAR group to a nation-wide network interested in air pollution (and which also involves other members of AllerGen). Clearly, AllerGen funding has aided in growing this important area of air pollution and health-effects research.

Secondly, the AllerGen NCE has certainly enhanced my exposure to other investigators across the country and has facilitated collaborations. I was invited to speak at the first two of the AllerGen Scientific Conferences, and am now part of the Steering Committee for Programme A and for the Programme B Project Canadian Group on Food Allergy Research (CanGoFAR). The CanGoFAR project is a genuine national collaboration of AllerGen investigators. This exciting concept was derived from the Programme B investigators meeting to determine important areas that must be investigated, followed by teleconferences and face-to-face meetings that allowed us to further refine our ideas. At this stage, we have a good critical mass of researchers that we anticipate will significantly advance the state of knowledge on the immune mechanisms underlying the development of food allergies. It will be extremely interesting to see CanGoFAR develop in the coming years, both within AllerGen and beyond.

Thirdly, the AllerGen NCE has supported several of my trainees (at the undergraduate, doctoral and post-doctoral level) to attend key international conferences and AllerGen Workshops. In particular, the pulmonary function workshop held in Montréal at McGill and the Meakins-Christie labs allowed three of my trainees to accelerate their understanding of the techniques that are not used in my lab. We use the FlexiVent system for respiratory mechanics for assessing airway function and hyper-responsiveness in our mouse models of asthma, but this course allowed my HQP to learn the pros and cons of each of the methods that are in use in other labs.

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Dr. Frances Silverman, PhD, Associate Professor, University of Toronto, Former Programme A Research Leader and RMC Member and PI, AllerGen Project 05A6: *Allergic asthma: Air pollution and allergen interactions*

1) From the perspective of a leadership role in AllerGen

The creation of AllerGen has really begun to make an impact on the Allergy/ Asthma/ environment area. During my time as an alternate on the RMC, as the “Environment Lead” (in Theme I) for AllerGen, I was committed to achieving the substantive incorporation of the environment into AllerGen’s Programs. I attempted to recruit scientists and government into the network and the RMC whose main research is in the environmental area. There were 2 workshops in the area with the second one (“Environmental Assessment”) having international participants. There is an extremely active and vibrant Environmental Working Group (EWG) which meets by teleconference on a regular basis to discuss and plan ongoing and future studies. The environmental area has become a major part of CHILD and is supported by this EWG as well. Furthermore, with the development of the AllerGen Themes into Programs, the role of the “Environment Lead” has become a full-fledged Co-Lead of Program A, an evolution that demonstrates the value placed on the area by AllerGen. It is a matter of personal satisfaction that AllerGen has successfully brought together the perspectives from both health and the environment to address issues of the role of environmental factors on allergy/asthma and their interaction with host (genetic factors).

2) From the perspective of a researcher in AllerGen (Dr. Frances Silverman)

The network approach has given us access to internationally renowned experts in allergy, genetics and the environment. The combined expertise of this diverse group has proven to be a valuable resource that has broadened our approach to our research. Because of this, the study has refocused our work from centering on mostly cardiovascular outcomes, back into respiratory, allergy and air pollution as well as into the area of genetics. AllerGen networking has reached across our other ambient air pollution studies. Our collaborators at Harvard have also increased interest in allergy and genetics. This has led to the development of a pilot project with a research group in Italy, looking at epigenetics. Without the platform of the AllerGen study, this would not be so easily achieved. AllerGen’s unique and unprecedented opportunities for promoting training of students and staff are a defining strength of the AllerGen network. The next generation of researchers will have an early start on contacts and collaborators as well as a diverse knowledge base, while actively participating in new and novel research in the area. Through networking, we have been able to take on more students, such as undergraduate medical students on electives from other countries (e.g., from a research collaborator in Brazil and another from Scotland). Through AllerGen, we continue to increase our international academic exposure at all levels.

Dr. Jean-Pierre Lavoie, DMV, Dip ACVIM, Professor, Department of Clinical Sciences, Faculty of Veterinary Medicine, University of Montreal, PI, Programme B, AllerGen Project 07B4.4: *Study of the pathogenesis and reversibility of airway damage and repair during chronic mucosal immune responses to environmental allergies*

The funding provided by AllerGen and CIHR has allowed us to characterize an equine model of chronic asthma and was the basis for a new application to CIHR. In addition, being part of the AllerGen Network has been useful for informal networking with clinician scientists at the annual events. Perhaps because of the small size of the meetings, there seems to be a great

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willingness of the participants to share their newest findings with others (it is more collegial than competitive). Specifically, social events at the meetings have put me in contact with Dr Darryl Knight from iCapture whose research assistant has provided us with useful information on laser microdissection, an exciting but challenging novel research tool. My graduate students have also appreciated being contact with other students working in related domains. They have remained in contact with some PhD and post-doc students that they encountered at trainee meetings.

Tony R. Bai, MD, FRACP, FRCP(C), FACP, Professor of Medicine UBC, Head, Respiratory Division, Providence Health Care, Associate Director, Providence Heart + Lung Institute, St Paul's Hospital, PI, AllerGen Project 07B4.2: *Environmental impact on the epithelial immune barrier in asthma*

The mucosal immunity research group in the iCAPTURE Centre at the University of British Columbia has participated in the AllerGen network for the past three years, through the co-funding of our group grant with CIHR.

The participation in AllerGen has been a very positive experience for our group.

There has been cross-fertilization of research ideas and experimental design through presentation by members of our group and their trainees at AllerGen meetings.

We have had the benefit of input from the scientific leaders of AllerGen into multiple sub-projects on the theme of the effect of interaction of viruses and particulate air pollution on epithelial mucosal inflammation; this is most relevant to the pathogenesis of airway diseases, in particular asthma.

Our team project did not receive sufficient funding from CIHR to achieve more than 50% of the proposed research goals over the past three years. The additional funding from AllerGen has been critical in accomplishing more.

It has also enabled new and ongoing collaboration on further research proposals from members within our group with others across Canada.

Participation in the trainee network by our trainees has led to the emergence of new principal investigators.

Kelly McNagy, PhD, Professor, Department of Medical Genetics, University of British Columbia, PI, AllerGen Project 07B4.1: *Role of mast cells and eosinophils in allergic inflammation and fibrosis of the lung*

The Allergen Program has acted as a **true catalyst** for Canada-wide collaborations focused on group effort to cure allergic disease. In my own case, our group grant (CanGoFAR) brought together 10 PIs from extremely diverse backgrounds and lured them into focusing their efforts on an un-met challenge in Canada: understanding the etiology and basic mechanisms controlling peanut allergies. This is extremely topical as there are a tragic number of deaths, particularly among children, related to nut allergies and there is very little in the way of both preventive strategies and understanding how these life threatening allergies develop. One year later, I have found myself speaking regularly with our team (at least 5 times annually) and making a team effort in understanding and treating this important problem. This simply would never have happened without the seed funding from the AllerGen network and the facilitation of

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our interaction through the AllerGen administrative staff. Not only is this project going forward at full throttle but, in addition, merely by the fact that the PIs talk on a regular basis, a number of other spin-off collaborations and projects related to allergy are coalescing. The AllerGen network should be commended for changing what could have been competing efforts into a new and collaborative effort.

John Bienenstock, CM MD(Hons), FRCP, FRCPC, FRSC, Distinguished University Professor, Department of Medicine, Pathology & Molecular Medicine, McMaster University, PI, AllerGen Project 05B1: *Effects of probiotics on murine model of asthma*

I recognize that the mid-term evaluation of AllerGen is coming soon. I just wish to indicate formally that I have enjoyed our relationship. I believe that under your administrative leadership, this program, in my experience, is the best organized NCE that I have encountered. So please accept my congratulations on this and the enormous amount of hard work which it takes to achieve this. My comments extend to the staff who have been uniformly pleasant and efficient to work with and who have accomplished their various tasks with enthusiasm.

As you are aware, I was honoured by election to be a member of the Board for one year. I found this experience interesting and valuable and it confirmed that the business of AllerGen was being well taken care of and that matters of issue were presented for discussion to the Board.

The impact of AllerGen on the field of allergy in Canada has been very high. This applies to international standing as well as that in both private and public sectors in this country. This is no small feat and Dr. Denburg and his scientific colleagues, as well as yourself, should be congratulated. Wherever I go on an international front, this NCE is acknowledged and widely acclaimed.

I have also been personally involved in receiving grants from AllerGen and still am a grantee. This has allowed my research program to flourish and in this time of difficulty in research granting I have found it possible to use the national position and prestige of AllerGen as leverage especially when dealing with international companies. We have been able as a consequence to the funding to submit a provisional patent which may be valuable eventually in treating patients with allergy. We are also, as a consequence, in discussion with global companies, such as Johnson & Johnson, to develop new over-the-counter products for various manifestations of allergy. Our particular involvement in the CanGoFAR project involved in food allergy continues to be very encouraging from several points of view: scientific as well as the clinical translation aspects. I find this program well organized and it has been a pleasure to learn of the work of others in the field across Canada and this is proving to be useful in developing our research directions more in the network mode.

The funding from AllerGen has enabled us to develop HQP in research and one of the post doctoral fellows has recently been appointed as a result, to the faculty in the Department of Medicine. He continues to further his career in the field of probiotic effects in asthma.

Finally, let me lend my support to you in your application for renewal and continuing funding for this NCE program. I believe that it has fulfilled all its promises in varying appropriate degrees to date. I also believe that half way through its term it needs further funding to complete the term in order to do what it set out to do, namely change the face of allergy in Canada, both in terms of scientific status and also in terms of improvement of the health of Canadians.

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I feel privileged to have been part of AllerGen, and believe that it has succeeded and more than fulfilled its mandate.

Please accept my best wishes for the continuing success of AllerGen.

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PROGRAMME C: PUBLIC HEALTH, ETHICS, POLICY AND SOCIETY

Ann Clarke, MD, Associate Professor, Department of Medicine, Division of Experimental Medicine, McGill University, PI, AllerGen Project 07C2: *Surveying Canadians to assess the prevalence of common food allergies and attitudes towards food labelling and risk*; AllerGen Project 05A3: *Is the prevalence of peanut allergy increasing? A five-year follow-up study on the prevalence of peanut allergy in Montreal school children, aged 5-9*

I think the most significant experience I have had within AllerGen is the partnership with Health Canada in the SCAAALAR project.

Health Canada has provided in-kind support of approximately \$250,000 to the McGill and McMaster research teams headed by me and Susan Elliott, respectively. The joint funding of our project by Health Canada and AllerGen was announced by Tony Clement, Federal Minister of Health, in July 2008 and it generated substantial media attention.

Allan Becker, MD, Professor, Section of Allergy & Clinical Immunology, Department of Pediatrics & Child Health, University of Manitoba, Programme C, PI, AllerGen Project 07C7: *The Roaring Adventures of Puff: A school-based asthma education program*

The funding from AllerGen has allowed us to pursue a study of asthma education in urban, rural and remote setting working with children in their school environment. This unique approach to asthma education will be assessed for its impact in these settings where educator and specialist care are much less available.