



Request for Proposals

AllerGen Research Programme 2009-2012

3 February 2009

Canada 



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1. Overview

Funding for AllerGen NCE Inc. (AllerGen), the Allergy, Genes and Environment Network, has been renewed by the Networks of Centres of Excellence (NCE) program to 2012. As a result, AllerGen is launching its third call for proposals for allergic and related disease research and development initiatives. AllerGen invites proposals for multidisciplinary, networked and partnered programmes of research that it could support to 2012 towards the achievement of its goal of reducing the impact of allergic and related immune diseases nationally and globally.

On December 24, 2008, brief expressions of interest (EOIs) were invited (although not required) to be submitted to the appropriate AllerGen research Programme Leaders by January 15, 2009. These EOIs, as well as other research opportunities, will be discussed and integrated where possible, through a networked, formative process that will be undertaken up to and during AllerGen's Annual Research Conference in Ottawa February 15-17, 2009. AllerGen invites Letters of Intent for programmatically linked and networked research project budgets in the range of \$50,000 - \$200,000 per annum.

AllerGen Research Leaders are:

Programme A – Gene Environment Interactions

Dr. Peter Paré (ppare@mrl.ubc.ca)

Professor, Department of Medicine, University of British Columbia

Dr. Jeff Brook (jeff.brook@ec.gc.ca)

Senior Scientist, Air Quality Research Branch, Environment Canada

Programme B – Diagnostics and Therapeutics

Dr. Dean Befus (dean.befus@ualberta.ca)

Professor, Department of Medicine, University of Alberta

Dr. Paul O'Byrne (obyrne@mcmaster.ca)

Chair, Department of Medicine, McMaster University

Programme C – Public Health, Ethics, Policy and Society

Dr. Allan Becker (becker@cc.umanitoba.ca)

Professor, Department of Pediatrics, University of Manitoba

Dr. Susan Elliott (elliotts@mcmaster.ca)

Faculty of Social Sciences, McMaster University

A list of the EOIs received and discussed by each Programme will be circulated in advance of the AllerGen Annual Research Conference, *Innovation from Cell to Society*⁴, being held in Ottawa from February 15-17th, 2009, to facilitate networking and multi-disciplinary research team development; to identify future research opportunities and priorities in collaboration with partner organizations for the period 2009-2012; and to develop Letters of Intent (LOI) for networked research proposals.

LOIs will be due on March 15, 2009, and reviewed by AllerGen's Research Management Committee (RMC) for alignment, priority and fit with the Network's mandate and strategic goals in early April 2009, after which time a limited number will receive invitations to submit

networked Full Proposals (See Appendix D). The latter will be due by May 31, 2009, and will undergo review by an arm's-length International Expert Panel in June 2009. Applicants will receive notification of the outcome of their review by mid-July 2009, and successful teams will begin to receive funding instalments August 1, 2009.

Proposals for new, smaller scale, strategic research and knowledge translation and commercialization initiatives arising from Network research investments are welcome at any time throughout the year. Funding for these three types of initiatives is available through separate processes outlined on AllerGen's website at http://www.allergen-nce.ca/Research/In-Year_Research_Funding_Programme.html .

Interested parties are encouraged to view the AllerGen website (www.allergen-nce.ca/Research/RFP2009-2012.html) and check for alignment of proposed research with currently funded projects and programmatic areas.

Summary of AllerGen 2009-2012 RFP Milestones

January-February 2009:

Potential applicants/teams consult with Programme Leaders and other Network investigators through brief, informal EOIs for research aligned with AllerGen's strategic goals and priorities

Week of February 9, 2009:

EOIs received will be circulated to facilitate networking and multi-disciplinary team-building

February 15-17, 2009:

AllerGen's Annual Research Conference, which will provide opportunities for networking and workshops focused on the identification of new research and partnership opportunities 2009-2012 aligned with AllerGen's strategic goals and priorities

March 15, 2009: Letters of Intent due

April 1-2, 2009: Letters of Intent reviewed

By April 20, 2009: RMC issues feedback to all applicants and invites a sub-set of applicants to submit Full Proposals for funding 2009-2012. This feedback may include suggestions for consolidation of individual submissions into teams and networked research projects

May 31, 2009: Full Proposals due at the AllerGen Administrative Centre

By June 30, 2009: Arm's-length external review of the scientific excellence, capacity building, strength of networking, partnerships, social-economic impacts and budgets of submitted Full Proposals by AllerGen's International Scientific Excellence Advisory Committee (ISEAC), in conjunction with non-Investigator RMC members.

By June 30, 2009: Board review and approval of research proposals and budgets

July 15, 2009: Notification to applicants on status of applications for funding

By August 1, 2009: Funding installment payments commence

2. About the NCE Program

AllerGen NCE is a member of the federal Networks of Centres of Excellence (NCE) Program. The NCE Program invests in Canadian research and entrepreneurial talent in order to translate and apply knowledge that produces economic and social benefits for Canadians.

The Program plays an important role in mobilizing research talent within the Canadian academic community and in engaging Canadian and international partners from the private, public and non-profit sectors. Together, they expand the global knowledge frontier to generate and implement multi-faceted solutions to complex Canadian issues, which increases the benefits of research and research training to society, strengthens the Canadian economy and improves the quality of life of Canadians.

The NCE program achieves its goals by funding networks that are national in scope and that demonstrate excellence in research, training, knowledge advancement, technology exchange and exploitation, networking, partnerships and management. For a full summary of the mission and goals of the NCE program, see Appendix A.

Consistent with its role as a federally funded Network of Centres of Excellence, the fundamental goal of AllerGen is the development of innovative, multi-disciplinary research that catalyzes innovation which improves allergic disease treatment and management in all its forms - from cell to society. AllerGen aims to realize this goal through the strategic integration of population, environmental, social and biomedical sciences research aimed at the development of new technologies, public policies, clinical trials, social science research initiatives, and national research platforms; increasing highly qualified personnel; and reducing the socio-economic costs of allergic diseases and asthma.

3. About AllerGen

AllerGen was selected for NCE support in 2004 and launched its research program in April 2005.

AllerGen's Mission:

AllerGen's mission is 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.

AllerGen's Vision:

AllerGen's vision is to create an enduring network of allergy and immune disease experts whose discovery and development efforts contribute to reducing the impact of allergic and related immune diseases nationally and globally.

AllerGen's Strategic Goals are 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.
- Catalyze and facilitate the **development** of new research platforms, tools, processes, products and services arising from discoveries, and promote their commercialization, their use and their influence on public policy.

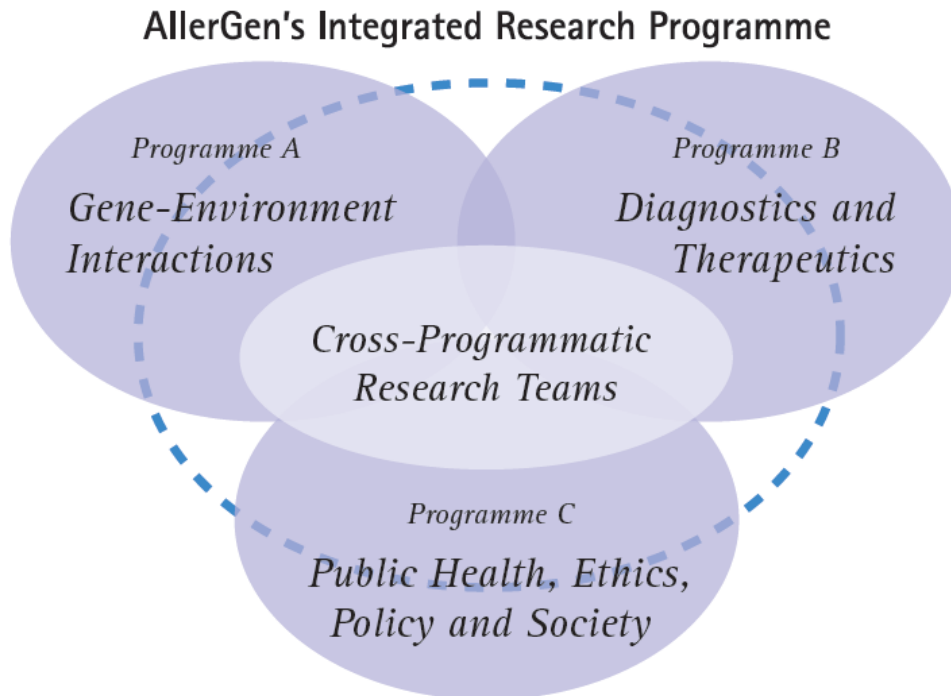
- Develop and maintain **networking** and **partnership** arrangements that enable knowledge and technology exchange and exploitation (KTEE) and reposition Canada at the forefront of innovation.
- Create new opportunities for the **training** of highly qualified personnel in allergy research, patient care, innovation and the health system, and advance professional and lay knowledge about allergic and related immune diseases.
- Provide responsible, cost effective and accountable **management**, administration and support to all aspects of AllerGen's activities.

From 2009 to 2012, AllerGen seeks to invest in nationally networked research teams demonstrating excellence, productivity and offering unique capacity building opportunities, as well as in research that builds on and extends existing AllerGen and partner investments with potential to accelerate social and economic impact through application of research results to real world problems and challenges faced by partner organisations, sectors of the Canadian economy and/or society.

AllerGen research priorities include three research foci of strategic importance to the generation of new knowledge with potential for social and economic impact in the area of allergic and related immune disease.

Strategic Research Programme Foci:

Figure 1: AllerGen's Research Programme Structure



1. **Programme A – Gene-Environment Interactions**

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

2. **Programme B – Diagnostics and Therapeutics**

Strategic Focus: Biomarkers, immune monitoring and drug development/discovery

3. **Programme C – Public Health, Ethics, Policy and Society**

Strategic Focus: Allergic disease management and surveillance

In addition, four cross-programmatic, multidisciplinary research thrusts fostered by AllerGen since 2005 are continuing research investment priorities for 2009-2012.

Cross-programmatic Research teams in priority areas:

Established Cross-programmatic Teams

4. *The Canadian Healthy Infant Longitudinal Development (CHILD) Study*
5. *Food Allergy and Anaphylaxis*

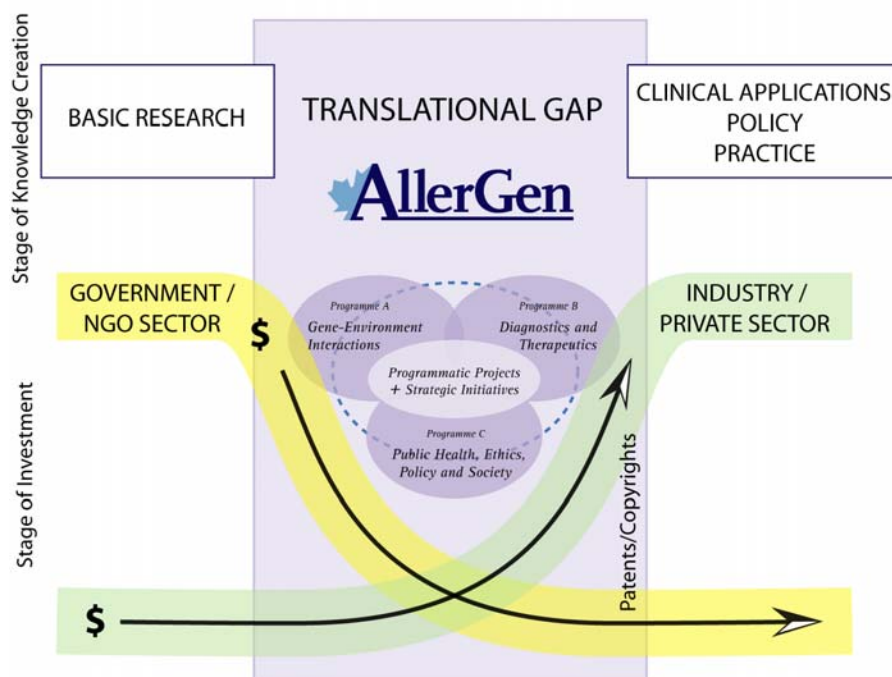
Emerging Cross-programmatic Teams

6. *Mind-Body Interactions and Allergic Disease*
7. *Occupational and Work-related Allergy and Asthma*

Funding research projects leading to social and economic benefits to Canada is a priority of both the NCE program and AllerGen. Knowledge translation is the all-important link between discovery and development. It is the bridge between the lab and real life. Proposals in this call will be reviewed for their potential for end-user applications. Translational AllerGen research aims to transform scientific discoveries arising from the laboratory, clinic, or population studies into clinical applications to reduce the incidence, morbidity, mortality and social and economic burden of allergies, asthma and related immune diseases. Translational research typically looks at two areas of translation. The first is the process of applying discoveries generated during research in the laboratory and preclinical studies, to the development of trials and studies in humans. The second area of translation concerns research aimed at enhancing the adoption of best practices in the community.

In this Request for Proposals, AllerGen largely expects to fund networked projects aligned with one of its research programmes or teams that are **potentially or actually translational** in nature, focusing on projects primarily, but not exclusively, in the applied stages of study rather than purely basic discovery stage. Thus, for the next phase of funding, AllerGen investments in research aim to provide Canadian university researchers with a bridge across the gap that exists between discovery based research and its translation into clinical, policy, practice and commercial outcomes.

Figure 2: AllerGen's Research Investment Strategy



4. History of AllerGen Requests for Proposals Since 2004

On November 8, 2004, AllerGen issued its initial Request for Proposals (RFP) to the Canadian research community. AllerGen's first call launched a national, research program focused on five research themes:

- Theme I: Genes & Early Life Determinants
- Theme II: Environments, Populations & Society
- Theme III: Mechanisms & Biomarkers
- Theme IV: Therapeutics & Drug Discovery
- Theme V: Prevention, Control and Public Policy.

From this call 33 research projects were funded for periods of 1-2 years.

On March 12, 2007, AllerGen issued its second RFA. This call focused on nationally networked research projects across three programmatic priority areas:

- Programme A: Gene-Environment Interactions
- Programme B: Diagnostics and Therapeutics, and
- Programme C: Public, Health, Ethics, Policy and Society.

From this call, 20 research projects were funded for periods of 1-2 years.

AllerGen is now issuing its third RFP for research to be supported from 2009-2012 (i.e., funding up to 3 years in duration). Proposals must be aligned with at least one of AllerGen's seven strategic research priority areas.

5. Specific Objectives and Eligible Research Areas

AllerGen's third RFP invites the submission of nationally networked research programmes that are aligned with AllerGen's research priorities, utilize Network research platforms, involve partner organizations in research, and demonstrate potential to facilitate the development of innovations arising from new knowledge and new applications of existing knowledge. Proposals that cut across research programmes are encouraged. A commitment to multi-disciplinary research is critical.

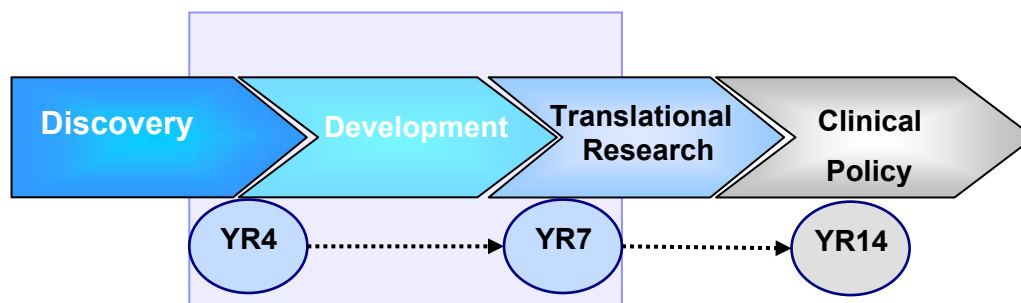
AllerGen's overarching research objectives are to:

1. Understand the causes of the allergy epidemic;
2. Facilitate the development of new bio-molecular research-based platforms, tools and processes;
3. Facilitate the development of new products and services for allergic disease and asthma management;
4. Advance professional and lay knowledge about allergic diseases; and
5. Train highly qualified personnel nationally in allergy research, innovation and health care.

A detailed description of each of AllerGen's strategic research priorities and cross-programmatic research thrusts, their specific objectives, related research platforms and targeted deliverables is provided below.

6. AllerGen's Strategic Research Priorities and Objectives 2009-2012

Programme A: Gene-Environment Interactions



Strategic research priorities include:

1. Accelerate implementation and subject recruitment for the *Canadian Healthy Infant Longitudinal Development (CHILD) Study*, with a primary focus on discovering the environmental and genetic origins of the development of allergic diseases and asthma.
2. Develop novel add-on studies that utilize the wealth of data and samples being collected as part of the CHILD Study.
3. Capitalize on the wealth of data nationally and internationally concerning *genetic polymorphisms, genome-wide association studies* and *early life phenotypes* in existing completed and ongoing cohorts towards the identification of novel genetic tests and biomarkers of allergy and asthma, including pharmacogenomics and 'personalised' medicine, as well as novel therapeutic targets.
4. Focus on the functional consequences of the *genetic polymorphisms* in candidate genes which are related to early life and adult allergic processes and asthma.
5. Determine the 'prime-candidate' *environmental events and exposures* (including airborne allergens and pollutants, infections, nutrition, gender and psychosocial stress) during infancy and early childhood involved in development and perpetuation of the allergic diathesis. Emphasis should be placed on improved environmental exposure characterization, better integration of animal and human models and analysis of data, and environmental studies both within the CHILD Study and in collaboration with other groups in Canada who are studying early life determinants of social and biological development.
6. Develop and implement clinical-environmental-genetic algorithms to predict the development and severity of asthma/allergy.

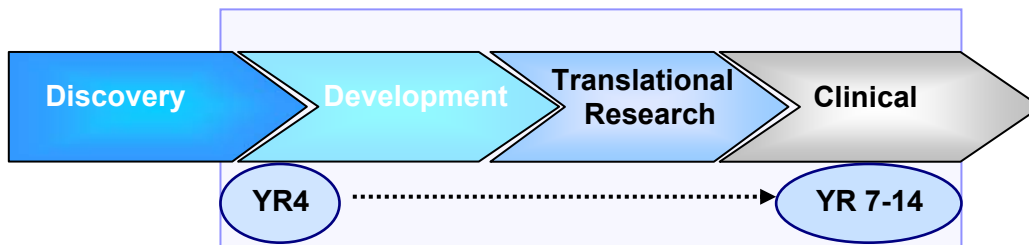
To date, AllerGen's Genetics and Gene-Environment Interactions teams have examined the independent effect of a person's genetic makeup, epigenomic profile and specific environmental exposures on the development of allergic disease and asthma. Future research in this programme should focus on the links and interactions between genes, epigenetic changes and exposures in the genesis and severity of asthma, allergy and anaphylaxis to determine potential genetic tests and new targets for therapeutics utilizing

national and international patient population cohorts, human cellular systems and animal models.

Building on and aligned with existing research investments some of Programme A's research objectives to 2012 are:

1. **Early Life Phenotypes** - Capitalize on the wealth of data and samples being collected in the CHILD Study to investigate *early life allergy/asthma phenotypes, environmental and genetic/epigenetic precipitants*. Streamline and standardize immune cell phenotyping from cord blood samples to enable the CHILD Study and its clinical immune monitoring (with Programme B)
2. **Gene-Environment interactions** - Test whether specific environmental exposures, including stress, microbes, allergens, cigarette smoke, outdoor or indoor exposures interact with specific gene polymorphisms to increased risk for allergic disease.
3. **Functional Genomics and Target Identification** - In collaboration with Programme B researchers, investigate the functional consequences of the genetic polymorphisms and epigenetic changes that have been associated with asthma and allergy in AllerGen's genetic and epigenetic studies. Based on the functional genetic and epigenetic projects, develop potential biomarkers and/or therapeutic targets for diagnostics and therapeutics, utilizing expertise in AllerGen's Clinical Investigator Collaborative (CIC).
4. **Environmental monitoring and testing** - Develop and extend models for quantification and/or classification of environmental exposures particularly for application in research aimed at discovering the impact of outdoor and indoor chemical and biological compounds on the development of allergic disorders, including asthma (e.g., CHILD Study). Develop and extend innovative approaches to measure exposures to chemicals and microbes in outdoor and indoor air and dust, such as molecular-genetic characterization and practical sample collection techniques. Undertake innovative comparisons of modeling results with more direct exposure measurements such as home and personal samples indicative of exposure to compounds posing a risk to respiratory health and development of allergic disorders.
5. **Diagnostics**: Develop and test clinical-environmental-genetic-epigenetic algorithms to predict the occurrence and severity of allergic disease, including peanut allergy.

Programme B: Diagnostics and Therapeutics



Strategic research priorities include:

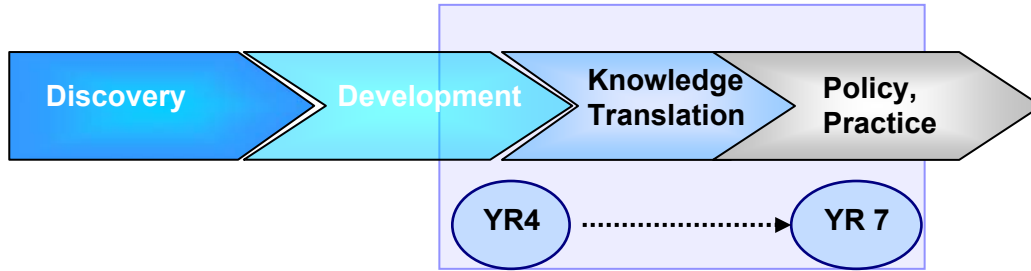
1. Investigate the cellular and molecular immunological bases of the development of allergy/asthma towards applications leading to the development of national immunodiagnostic (biomarker) platforms relevant to the onset, diagnosis, and treatment of allergic diseases and asthma.
2. Investigate novel neuroimmune (mind-body) interactions in allergy and asthma towards the development of new allergy and asthma diagnoses and treatment strategies.
3. Develop a comprehensive, multidisciplinary prevention strategy for food allergy (and other specific allergic diseases) based on genetic and epigenetic markers of risk, mechanisms and clinical application, with translation of findings in co-ordination with Programme C: Public Health, Ethics, Policy and Society research.
4. Further develop and expand the capacity of the Clinical Investigator Collaborative (CIC) across Canada and internationally, its industrial and academic partnerships, the scope of clinical research questions addressed, and its integration with research on biomarker and diagnostics development.
5. Build upon AllerGen research data on the genetics of allergic disease to discover potential therapeutic targets in the CIC (with Programme A).
6. Through the CIC, fast-track recently developed immune interventions, new biologics and molecular entities as therapies for allergic diseases and asthma.
7. Discover new drugs for allergy/asthma within AllerGen by capitalizing on new findings on basic mechanisms, biomarkers and animal modeling, and validation of novel drug targets, in partnership with Canadian and international biotechnology and bio-pharmaceutical industries.

To date, AllerGen Diagnostics and Therapeutics research has aimed to enhance indicators of asthma and allergic disease, develop effective monitoring methods and develop new therapeutics to treat allergy, asthma and immune-related diseases. Building upon current investments, future research should aim to move biomarkers and immune monitoring science from the laboratory and apply it to the discovery and development of new therapies and drug targets in a clinical setting.

Building on and aligned with existing research investments, Programme B research objectives to 2012 are:

1. ***Biomarker and Target Discovery*** – Investigate and isolate novel biomarkers linked to the development of asthma and allergies and molecules that may be used as targets for new therapeutics.
2. ***Allergic Disease Therapy and Drug Development/Discovery*** – Through the CIC, fast track recently developed therapeutics and biologics for the treatment of allergic disease and asthma. Investigate potential off-label drug use for the treatment of the allergic disease and asthma patient populations. Discover/facilitate the development of new drugs for allergy, asthma or anaphylaxis within AllerGen research by capitalizing on research findings to date on mechanisms, novel biomarkers and drug targets.
3. ***Platform Research*** – Further develop and expand new immunodiagnostic and immune (adaptive and innate) monitoring platforms, *in vitro/in vivo* models relevant to human allergic disease and asthma, and databases of immunobiologic knowledge to support AllerGen research network-wide.

Programme C: Public Health, Ethics, Policy and Society



Strategic research priorities include:

1. Investigate and disseminate understanding of the genetic, environmental, psychosocial and biological determinants of allergic disease and asthma, in coordination with research findings from Programmes A and B, also utilising consensus approaches and collation from existing research databases.
2. Investigate, implement and evaluate novel approaches to recognition, diagnosis, management and prevention of school and work-related or occupational and work-related allergy and asthma.
3. Identify, implement and evaluate new and existing evidence-based knowledge translation and education strategies in allergy, asthma and anaphylaxis that can be applied across jurisdictions and age groups, with an initial focus on school and daycare settings.
4. Develop, implement and evaluate new prevention strategies and economically sound therapies to modify allergic disease and asthma expression, morbidity and mortality in at-risk groups.
5. Analyze existing laws, ethical frameworks, regulations and public policies, and develop, disseminate and evaluate new, evidence-based public policies and policy analyses for the study, control and prevention of allergy, asthma and anaphylaxis.

As new policies and practices are developed to mitigate negative influences on the allergic disease patient population, they are often left unchallenged and as a result are often out-of-date by today's standards. Prevalence and perception issues are also poorly understood in a Canadian context. Programme C – Public Health, Ethics, Policy and Society research should aim 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 and improve disease management and public health. This research programme should also 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.

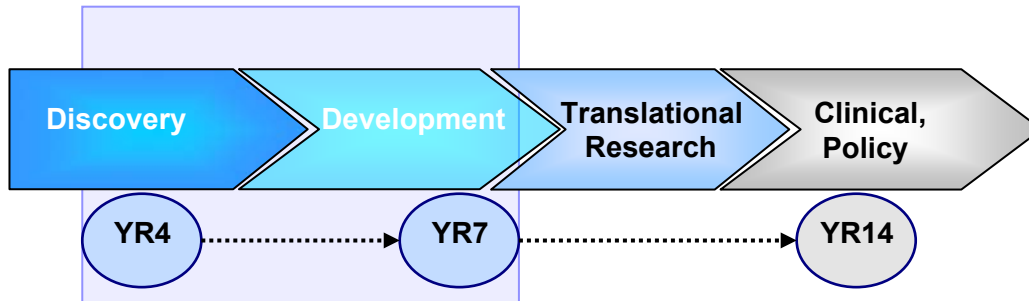
Building on and aligned with existing research investments, Programme C objectives to 2012 are:

1. ***Policy Research*** - Investigate and disseminate current policies, laws, regulation and frameworks within the various policy environments. Identify and investigate choices or courses of action that lead to optimal decisions to resolve identified policy problems. Identify and investigate the outcomes and/or impacts resulting from current policy actions in the community. Produce evidence that helps resolve policy debates (reconceptualising policy problems and creating novel solutions).
2. ***Monitoring and Surveillance*** – Identify new and existing evidence-based knowledge translation and education strategies in allergy, asthma and anaphylaxis.
3. ***Health Economics*** – Examine the economic burden of disease, contingency evaluation analysis, impacts on individuals (childhood, adolescence, adulthood), families and special or marginal communities living with allergies, asthma, anaphylaxis or related immune diseases.
4. ***Improved Disease Management Strategies*** – Examine current disease management practices or lack thereof to provide a systematic approach to improving health care for people with allergic disease. Development of educational tools and resources is a priority in order to assist patients to effectively manage their condition.
5. ***Psychosocial Impacts*** – Examination of the psychosocial impacts of individuals living with allergies, asthma, anaphylaxis and immune related disease in the context of individuals, families, and special or marginal communities towards development of new tools and strategies for diagnosis and disease management.

Cross Programmatic Team Objectives

Established Cross-programmatic Team:

The Canadian Healthy Infant Longitudinal Development (CHILD) Study



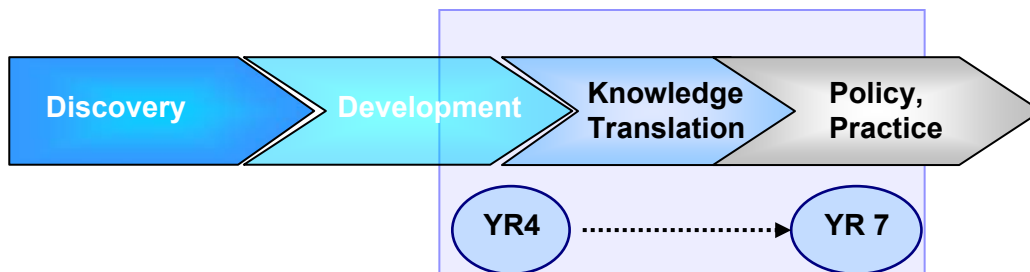
This multi-year birth cohort study developed in 2005-07 and launched in 2008 will investigate the genetic and environmental factors that influence the development of asthma and allergies in children. Led by Dr. Malcolm Sears, Professor of Medicine at McMaster University, the study will follow 5,000 Canadian children from pregnancy through early childhood (age 5) and investigate the roles of indoor and outdoor environmental exposure, infections, nutrition and genetics in the development of asthma and allergies. AllerGen and CIHR have partnered to provide \$12 million to support the data collection phase of the CHILD study to 2013. No additional AllerGen funding will be provided directly to the CHILD Study during that timeframe. However, funding opportunities will be available for additional studies to begin analyses of CHILD Study samples as well as spin-off research as a result of data gleaned from the CHILD Study.

Building on and aligned with existing research investments, CHILD Study related research objectives to 2012 are:

1. **Sample Analysis** – The CHILD Study is currently assured funding by AllerGen and CIHR for a total of \$12 million over the next 5 years and will not be eligible for additional direct funding from AllerGen until 2014.

However, researchers within the current CHILD team as well as external researchers – i.e., researchers not currently involved in the CHILD Study, may, in collaboration with the CHILD Study team, submit proposals to analyze samples that have been collected through the CHILD Study. Proposals must demonstrate alignment with the CHILD Study and its deliverables and goals. Such proposals must also be reviewed and evaluated by the CHILD Study Executive Committee in advance of its submission to AllerGen. **Invited Full Proposals that build on CHILD Study data must be accompanied by a letter of support from the CHILD Study Executive.**

Established Cross-programmatic Team:
Food Allergy and Anaphylaxis



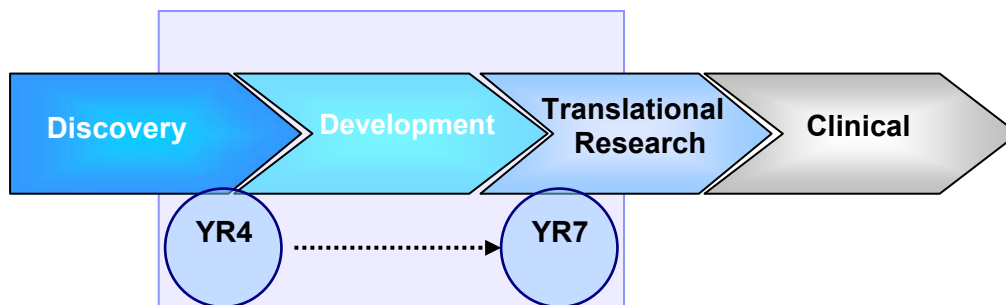
Food allergy is a major international health problem. Canadian data reveal that about 1.5% of Canadian school-aged children suffer from peanut allergy. AllerGen's commitment to addressing the serious and prevalent problem of food allergy led to investments in the clinical and social implications of these conditions, as well as to a focus on isolating the mechanisms of action associated with food allergies, with the aim of developing more refined diagnostics and treatment strategies and tools. Desired results from AllerGen's multidisciplinary food allergy and anaphylaxis research investments include: enhanced understanding of the underlying genetic and environmental risks and causes of food allergy; improved diagnostics and therapeutics; disease prevention and control strategies; new evidence-based public policies; and improved health and safety for food allergy sufferers.

Building on and aligned with existing research investments, Food Allergy and Anaphylaxis research objectives to 2012 are:

1. ***Mechanisms of Action*** – Investigate and evaluate food allergy mechanisms of action, routes of sensitization and impacts of co-exposure and various environments. Examine the effects of early and late life exposures to food allergens to induce or enhance therapeutic tolerance.
2. ***Diagnostics*** – Develop improved diagnostic techniques for the prediction and evaluation of low- and high-risk food allergic individuals.
3. ***Disease Prevention and Control*** – Determine current Canadian statistics on food allergy and anaphylaxis through the use of epidemiological studies looking at prevalence, early life exposures and genetic susceptibility.
4. ***Therapy and Treatment*** – Using current data, develop therapy and treatment strategies utilizing knowledge of effector mechanisms, sensitization and tolerance and clinical data. Focus on translating findings into pharmacological or policy interventions and investigating ways of enhancing tolerance therapeutically.

Emerging Cross-programmatic Team:

Mind-Body Interactions and Allergic Disease



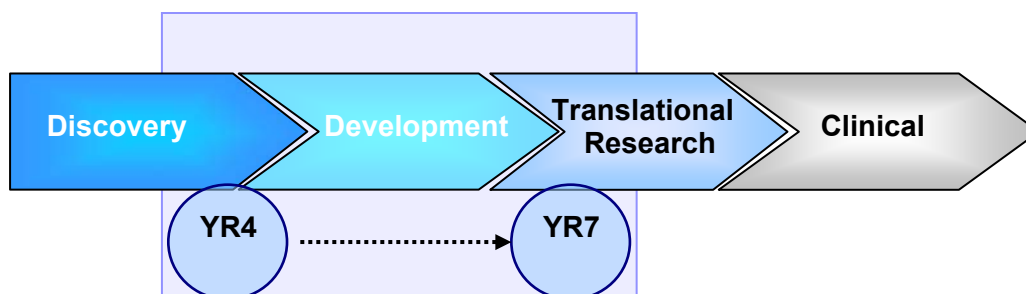
Throughout history, primitive and advanced cultures the world over have linked individuals' mental health to their physical state. Investigators in AllerGen's Mind-Body Interactions and Allergic Disease research programme are examining the connection between brain activity and its potential to trigger asthma and allergies. Research suggests that stress, depression, psycho-social state and socio-economic status can potentially influence the onset of asthma or trigger a relapse in affected individuals. AllerGen will continue to invest in research that investigates mind-body interactions and the relationship that exists between psycho-social determinates and clinical outcomes. Research should aim to develop intervention strategies that may be utilized nationally to decrease the impact of allergic disease.

Building on and aligned with existing research investments, Mind-Body Interactions and Allergic Disease research objectives to 2012 are:

- 1) **Mind-Body Interactions** - Investigate novel neuroimmune (mind-body) interactions in allergy and asthma, and apply relevant findings to network research. Investigate mind-body changes associated with stress, depression, psychosocial state or socio-economic status. Translate findings to inform policy development both provincially and nationally.
- 2) **Models of Allergic Disease** – Development of experimental *in vivo* and *in situ* models of stress, depression and allergic disease that can be utilized by other network research projects.
- 3) **Allergic Disease Epigenetics** – Investigate epigenetic factors in the development and expression of allergic diseases and asthma, including the analysis of epigenetic variation, and identification of relationships among environmental triggers, epigenetic changes, and socio-biological development, especially in early-life.
- 4) **Intervention Strategies** – Investigate psycho-social intervention strategies leading to new approaches to disease management. Design educational and research intervention strategies to influence research and policy development around mind-body research.
- 5) **Psychosocial Impacts** – Examination of the psychosocial impacts upon individuals living with allergies, asthma, and anaphylaxis in the context of individuals, families, and special or marginal communities and associated public policy implications.

Emerging Cross-programmatic Team:

Occupational and Work-related Allergy and Asthma



The complex relationship between occupational sensitizers, intensity of exposures, individual predisposing factors and the development of occupational and work-related allergy and asthma is not fully understood, and is an underdeveloped area of allergy and asthma research. AllerGen seeks to invest in networked research teams that aim to clarify the mechanisms involved in occupational and work-related allergy and asthma, develop Canadian data on the prevalence of occupational and work-related allergy and asthma, the development and uptake of improved diagnostic and prevention strategies and tools, identify the economic and social impacts of occupational and work-related allergy and asthma, and develop related policy and practice tools and recommendations.

Building on and aligned with existing research investments, objectives are:

- 1) ***Mechanisms*** – Better understand why and how certain individuals are at increased risk for occupational and work-related allergy and asthma. Investigate genetic, epigenetic and environmental factors that lead to sensitization to low and high molecular weight occupational exposures using human populations, animal models and cell systems where appropriate.
- 2) ***Diagnosis*** – Review current practice across Canadian physicians (both specialist and non-specialist) for the diagnosis of occupational and work-related allergy and asthma and develop national clinical standards for diagnosis. Improve elements within the diagnostic tool kit, particularly: e.g., agreed upon minimum diagnostic standards; improved diagnostic tests (e.g., *in vitro* tests, expert systems).
- 3) ***Consequences of developing the disease*** – Better understand both the personal and societal costs that result from developing occupational and work-related allergy and asthma. Better understand the incidence and prevalence of occupational and work-related allergy and asthma. Enhance knowledge about the burden of occupational and work-related allergy and asthma within the primary care sector and the consequences of continued exposure on individuals with work-aggravated asthma.
- 4) ***Behavioural issues*** – Review of the evidence-base for behavioural change in the context of the workplace, including barriers to effective implementation. Develop and apply novel approaches to change behaviours including use of the media, economic issues and channelling of information through partners and children.
- 5) ***Prevention*** – Priorities include analysis of existing data sets to identify gaps and targeted interventions for specific sectors; and intervention studies (perhaps involving Health Canada). AllerGen is also interested in research that aims to identify and understand the barriers to successful interventions at the primary care level; the secondary care level; amongst occupational health practitioners; the workplace and develop strategies to overcome these barriers to improve worker health.

7. Research Partners

AllerGen recognizes that networking and partnership arrangements are critical to successful realization of its vision and mission, of which development and transmission of new knowledge to those who can generate new goods and services is the centrepiece. Increased partnerships are the key to addressing the complex challenges that allergic/immune diseases—involving multiple organizations and medical disciplines—place before society. Partner organizations recognize the importance of multidisciplinary research in this area and are prepared to engage in specific research collaborations and partnership opportunities. A list of the organizations that have previously partnered on AllerGen research projects is provided in Appendix A.

AllerGen encourages participants to explore partnership opportunities with a wide range of potential public and private sector organizations. Letters of Intent may, therefore, be shared with, or written with approval of relevant partner organizations identified by researchers as willing to be involved in their specific project proposals.

8. Application and Evaluation Processes

Currently funded Network investigators are encourage to apply for funding to bring Network research to fruition in terms of its translation to social and economic outcomes and impacts. Past research productivity, networking and collaboration within multidisciplinary teams will be important for existing teams to demonstrate when requesting additional funding for currently supported research.

New teams are eligible to apply for AllerGen research support 2009-2012, but they should be networked, multidisciplinary and align their research proposal with AllerGen's strategic research priorities and demonstrate potential for research outcomes with social and/or economic impacts. Partnerships and identification of receptor sectors and/or organizations as well as value-added of the future research proposed will be significant considerations in AllerGen's review of all proposals.

8.1 Process for Call for Letters of Intent

The Network Administrative Centre will receive all Letters of Intent (LOI), and verify them for completeness. The LOI, of **up to four pages** in length plus a budget and CVs of principal investigators and key research co-investigators, should include a summary of:

1. The proposed research question(s).
2. Purpose/objectives of the proposed research.
3. Relevance of the proposed activity to AllerGen's mission and strategic research programme goals, objectives and priorities.
4. Degree to which the proposal builds upon existing AllerGen research and research platform investments to date or is justifiable as a new initiative based on the value-added it represents for AllerGen's overall research portfolio.
5. Methodological approach and use of research platforms.
6. Research deliverables and pertinent milestones, timeframes to March 31, 2012 (indicate whether or not the project will extend beyond 2012).

7. Planned networking across disciplines and research sites (universities, hospitals, institutes).
8. Evidence of research experience and leadership capacity of the team (identify the research team collaborators or prospective collaborators involved and briefly outline their role and previous track record of leadership within AllerGen, if applicable).
9. Plans for external research partnerships within industry, government and non-government organisations, not-for-profit agencies, advocacy groups, healthcare providers etc. (identify the partners or prospective partners involved and briefly outline their role, use of their facilities, resources).
10. Opportunities for knowledge translation and exchange and/or technology transfer of the research proposed along a continuum leading to social or economic impacts.
11. Progress made on AllerGen funded projects to date (if appropriate). List published papers, abstracts, additional funding sources, disclosures, patents, clinical and policy guidelines, etc.
12. Contribution to training of highly qualified personnel (briefly summarize the number and level of trainees potentially involved and the experience/expertise afforded them by involvement in Network-funded research).
13. Project management strategy (briefly summarize how this project will be managed and deliverables tracked).
14. Total Budget: Total requested from AllerGen per year; total anticipated from other sources (specify source and value, cash and in-kind).

LOIs will be selected by the AllerGen's Research Management Committee and external reviewers, after assessment according to the criteria listed below:

1. Relevance of the proposed research to the Network's mission and goals and strategic fit with Network research objectives.
2. Degree to which the proposal builds upon existing AllerGen research, AllerGen networks and research platform investments to date or is justifiable as a new initiative based on the value-added it represents for AllerGen's overall research portfolio.
3. Appropriateness of the proposed methodological approach, deliverables, timeframes and potential utilization of available research platforms.
4. Appropriateness of networking and partnership plans.
5. Potential for knowledge translation/technology transfer, exchange and exploitation.
6. Potential contribution to the training of highly qualified personnel.
7. Strength of the research team and project management capacity.
8. Evidence of progress made on AllerGen funded projects to date and value-added of related deliverables (if appropriate).
9. Appropriateness of budget and potential to leverage additional non-Network funds.

Reviewers will place priority on projects that:

- Build upon current AllerGen projects
- Represent programmatic, multidisciplinary approaches to developing solutions to challenges of strategic priority leading to social and economic benefits for Canadians
- Involve partner organizations; and,
- Are likely to result in innovations arising from new knowledge and new applications of existing knowledge.

All reviewers will be required to comply with the Network's conflict of interest policy, circulated with each set of proposals for review.

The overarching objective is to build on AllerGen's existing foundation towards establishing a network of *integrated activities* to optimize achievement of AllerGen's goals. Research proposals not directly aligned with AllerGen's strategic priorities for investment will be eligible for consideration, but may not be treated as a priority within the selection process.

Teams whose Letters of Intent are selected for approval will be invited to submit a full proposal. Notification of successful applicants will take place by April 20, 2009. Full proposals are due May 31, 2009. Written advice will be provided to applicants to aid their preparation of full proposals, and in some cases, *consensus/networking workshops* will be facilitated by AllerGen to assist the development of collaborative, networked and partnered full proposals.

8.2 Process for Call for Full Proposals

Full proposals, the body of which should not exceed ten pages in length (see Appendix D for the application form), will be forwarded for independent peer-review to both AllerGen's International Scientific Excellence Advisory Committee (ISEAC) and those members of AllerGen's Research Management Committee (RMC) who are not also Network Investigators. Research Management Committee reviewers (non-researchers) will provide an independent assessment of the networking, partnerships, commercialization and knowledge translation aspects of the proposals.

A report from the ISEAC will be provided directly to the Board of Directors and to the Research Management Committee. The full Research Management Committee will, taking into consideration advice from the ISEAC, finalize the funding recommendations and the Scientific Director will present these recommendations to the AllerGen Board for review and approval. ***All reviewers will be required to comply with the Network's conflict of interest policy, circulated with each set of proposals for review.***

Full Proposals will be evaluated by the ISEAC against the following criteria:

1. Scientific excellence of the proposed research.
2. Appropriateness of the proposed methodological approach, deliverables, timeframes and potential utilization of available research platforms.
3. Appropriateness of networking and partnership plans.
4. Potential for knowledge translation/technology transfer, exchange and exploitation.
5. Potential contribution to the training of highly qualified personnel.

6. Strength of the research team and project leadership and management capacity and plans.
7. Evidence of progress made on AllerGen funded projects to date and value-added of related deliverables (if appropriate).
8. Appropriateness of budget and potential to leverage additional non-Network funds.

In addition, AllerGen's Research Management Committee (non-investigator members only) will also assess full proposals for:

1. Relevance of the proposed research to the Network's mission and goals and strategic fit with Network research objectives.
2. Degree to which the proposal builds upon existing AllerGen research and research platform investments to date or is justifiable as a new initiative based on the value-added it represents for AllerGen's overall research portfolio.
3. Evidence of progress made on AllerGen funded projects to date and value-added of related deliverables (if appropriate).
4. Strength of networking and partnerships proposed and potential for knowledge translation/technology transfer, exchange and exploitation.
5. Potential contribution to the training of highly qualified personnel.

9. Who is Eligible to Apply?

Eligibility criteria for all CIHR research funding programs apply. Please refer to Section 1-B General Policies, 1-B1 Eligibility Requirements for CIHR Grants and Awards on the CIHR Website. See <http://www.cihr-irsc.gc.ca/e/22630.html> - **1-B1.1, Section 1-B1.1 Eligible Individuals and Institutions.**

10. Timelines

Key Dates	Action
January – February 2009:	Potential applicants/teams consult with Programme Leaders and other Network investigators toward development of research proposals
Week of February 9, 2009	A list of EOIs and ideas received to date will be circulated to facilitate networking and multi-disciplinary team-building
February 15-17, 2009	AllerGen research conference, which will provide opportunities for networking and workshops focused on the identification of new research and partnership opportunities 2009-2012 aligned with AllerGen's strategic goals and priorities
March 15, 2009	Letters of Intent due
April 1-2, 2009	Letters of Intent reviewed
By April 20, 2009	RMC issues feedback to all applicants and invites a sub-set of

Key Dates	Action
	applicants to submit full proposals for funding 2009-2012. In addition, opportunities for the consolidation of individual submissions may be identified and recommended to facilitate the development of teams and networked research proposals
May 31, 2009	Full Proposals due
By June 30, 2009	Arm's-length external review of the research proposals by AllerGen's International Scientific Excellence Advisory Committee (ISEAC); review of alignment with strategic priorities; contributions to the Network to date (if applicable); strength of networking, partnerships and social and economic impacts including impacts on training HQP by non-researcher Research Management Committee members
By June 30, 2009	Board review and approval of research proposals and budgets
July 15, 2009	Notification to applicants on status of applications for funding
By August 1, 2009	Funding instalment payments commence

11. Funds Available

Network-funded Investigators will be eligible to apply for research funding for one to three-year grants with funding not extending beyond March 31, 2012. However, investigators involved in approved research projects will, with AllerGen authorization based on satisfactory progress against agreed upon milestones and timeframes, be able to spend their approved funding from AllerGen's April 1, 2009 - March 31, 2012 research budgets until March 31, 2013. Projects will be funded through AllerGen's overarching programmes of research: Programme A – *Gene Environment Interactions*; Programme B - *Diagnostics and Therapeutics*; and Programme C – *Public Health, Ethics, Policy and Society*, with a total budget for 3 years of approximately \$9.3 million allowing for a yearly total budget of approximately \$3.1 million of which \$1 million per year is earmarked for the CHILD Study data collection process. Applicants will be encouraged to submit project budgets in the range of approximately \$50,000 - \$200,000 per annum. Eligibility for continued funding to 2012 will be assessed quarterly and is dependent upon performance as assessed against approved milestones and timeframes.

12. Project Management and Reporting Expectations

AllerGen will be implementing a strong project management approach to vest principal investigators with more responsibility and accountability for all aspects of project management and results. AllerGen's Research Management Committee, Network Supported Intellectual Property (NSIP) Advisory Committee and Policy, Ethics, Legal and Social (PELS) Advisory Committee have active role in reviewing project progress and potential for knowledge and technology exchange and exploitation opportunities on an ongoing basis.

This approach encompasses a number of aspects as follows:

- Principal investigators are responsible for determining the allocation of funds within project teams according to ongoing progress and need. It is expected that continued funding for investigators participating in a project will be contingent on reasonable progress towards approved milestones and deliverables
- Principal investigators will be responsible for submission of consolidated Quarterly Progress Reports as well as a Baseline and Final progress reports. These reports will include updates and accounts of research progress, achievement of milestones, networking, partnerships, HQP, knowledge translation and technology transfer activities, publications and/or presentation and description of how funding is being used. Projects reports will be reviewed by Programme Leaders and the Scientific Director to ensure satisfactory progress, and where appropriate, by the *Network-supported Intellectual Property and Policy, Ethics, Legal and Social Advisory Committees*. Should insufficient progress be made following the development and implementation of a Network-approved action plan to address concerns regarding progress, funding for the supported project may be frozen and/or recalled.

13. Application Forms

The Letter of Intent application form is provided in this document in Appendix C. The Full application form is attached as Appendix D. On-line application forms for the Letter of Intent and full proposals, as well as the full proposal budget sheets are available at www.allergen-nce.ca/Research/RFP2009-2012.html

14. Submission Process

Please send Letter of Intent submissions by e-mail to execsec@mcmaster.ca on or before March 15, 2009. Letters of Intent must be received before midnight EST on March 15, 2009 to be considered eligible for consideration.

15. Contacts for Further Information

For general questions about the AllerGen NCE call for Letters of Intent, due on March 15, 2009, please contact:

Diana Royce

Managing Director & COO

AllerGen NCE Inc.

McMaster University

MDCL 3120

Hamilton, ON L8N 3Z5

Phone: (905) 525-9140, ext. 26502

Fax: (905) 524-0611

Email: dianaroyce@sympatico.ca

Appendix A: Mission and Goals of the NCE Program

(NCE Annual Report, 2006-2007 http://www.nce.gc.ca/annualreport2006_2007/eng/program-programme-eng.asp)

Since 1989, the NCE Program has been turning ideas into innovations for the benefit of Canadians. This has only increased as the technological boom and the ramping-up of global competition intensified the need to:

- attract, train and retain highly qualified personnel;
- enable those people to generate new ideas; and
- engage academic, industry and public sector partners in translating those ideas into products, processes and policies that make Canada stronger.

The NCE Program is helping Canada gain the advantage it needs to protect the environment, improve the health of its citizens, make our country safer and better manage our natural and energy resources. The NCE accomplishes that goal by building cross-country networks that link leading researchers, by encouraging a multidisciplinary approach to problem-solving and by partnering with the private and public sectors to transform great ideas into outstanding innovations.

Each of the networks in the NCE Program takes on, as a core activity, the recruitment and training of the next generation of researchers and specialists who will move society forward. Network research projects are evaluated on their capacity to incorporate training into achieving results. In this way, the NCE is building the *people advantage* into Canadian scientific and technological development.

In setting excellence as the standard for all projects undertaken under the NCE banner, the program is helping create a *knowledge advantage* that is positioning Canada to emerge as a global leader in the application of scientific advances.

And by partnering with industry to translate knowledge into better goods and services, the NCE Program is providing an *entrepreneurial advantage* that other countries have openly admired and emulated.

Appendix B: Potential Partner Organizations

(a) Academic Institutions

University of Alberta
University of Arizona
Athabasca University
University of British Columbia
University Children's Hospital, Munich, Germany
University of Calgary
Dalhousie University
University of Guelph
Karolinska Institutet
Université Laval
University of Manitoba
McGill University
McMaster University
Memorial University
Université de Montréal
Mount Sinai School of Medicine
University of North Carolina
University of New Brunswick
University of Ottawa
Université du Québec à Chicoutimi
Queen's University
University of Saskatchewan
Université de Sherbrooke
Simon Fraser University
University of Toronto
University of Washington
University of Western Australia, Telethon Institute for
Child Health Research
University of Western Ontario

(b) Hospitals

Alberta Children's Hospital, Calgary
BC Children's Hospital, Vancouver
BC Women's Hospital and Health Centre, Vancouver
Children's Hospital of Winnipeg
Grey Nuns Community Hospital, Edmonton
Hamilton Health Sciences
Hôpital Sainte-Justine, Montreal
Hospital for Sick Children, Toronto
IWK Health Centre, Halifax
Misericordia Community Hospital, Edmonton
Montreal Children's Hospital
Mount Sinai Hospital, Toronto
Queen Elizabeth II, Health Sciences Centre, Halifax
Royal Alexandra Hospital, Edmonton
St. Boniface General Hospital, Winnipeg
St. Joseph's Healthcare, Hamilton

St. Michael's Hospital, Toronto
St. Paul's Hospital, Vancouver
Sturgeon Community Hospital, St. Albert, Alberta
Sunnybrook Health Sciences Centre, Toronto
Vancouver Hospital and Health Sciences Centre
West Elgin Community Health Centre
Winnipeg Health Sciences Centre

(c) Industry

3M Canada
Aerobiology Associates
Aerobiology Research Laboratories
AIM Therapeutics
Alexion Pharmaceuticals Inc.
Alimentary Health
Applied Biosystems
Arkitek Studios
AstraZeneca
Bayer Canada Inc.
Boehringer Ingelheim
Ception Therapeutics
Circassia Ltd.
CLR Media
Genentech Inc.
GlaxoSmithKline Inc.
Indoor Biotechnologies
IVAX Research Inc.
King Pharmaceuticals
Longwoods Publishing
Lumira Capital
Maple Leaf Foods
Medimmune Inc.
Merck Canada Inc.
Merck Frosst Inc.
Metro-Richelieu Inc.
Novartis Pharmaceuticals Canada Inc.
Nycomed Canada
Paladin Laboratories Inc.
Schering Plough Inc.
Sporometrics Inc.
Topigen Pharmaceuticals Inc.
Tripos International
Trudell Medical
Wyeth Pharmaceuticals Inc.

(d) Federal Agencies

Agriculture and Agri-Food Canada
Canada Mortgage and Housing Corporation
Canada Research Chairs Secretariat
Canadian Institutes of Health Research
Canadian Institutes of Health Research, Institute of Human Development, Child and Youth Health

Canadian institutes of Health Research, Institute of Infection and Immunity
Canadian Institutes of Health Research, Institute of Circulatory and Respiratory Health
Environment Canada
Foreign Affairs and International Trade Canada, Going Global Programme
Health Canada, Bureau of Chemical Safety
Health Canada, Food Directorate
Health Canada, Indoor Air Quality Section
International Development Research Centre
Natural Resources Canada
Western Economic Diversification Canada

(e) Provincial Agencies

Alberta Health and Wellness
Alberta Human Resources and Employment
Healthy Child Manitoba
Fonds de la recherche en santé du Québec
Ministère de la Santé et des Services sociaux, Québec
Institut de recherche Robert-Sauvé en santé et en sécurité du travail, Québec
Ministry of Health and Long-Term Care, Ontario
Workplace Safety and Insurance Board, Ontario
Workers' Compensation Board, British Columbia

(f) Research Institutes and Networks

Alberta Asthma Centre
Alberta Strategy to Help Manage Asthma and Chronic Obstructive Pulmonary Disease
Brain-Body Institute (St. Joseph's Healthcare, Hamilton)
British Columbia Centre of Excellence for Women's Health
Busselton Population Cohort, Sir Charles Gairdner Hospital, Western Australia
Canadian Institute for Advanced Research
Centre for Research Expertise in Occupational Disease, Toronto
Firestone Institute for Health Research, McMaster University
Gage Occupational and Environmental Health Unit, University of Toronto
GA2LEN (Global Allergy and Asthma European Network)
Hospital for Sick Children Research Institute, Toronto
Human Early Learning Partnership, British Columbia
James Hogg iCAPTURE, University of British Columbia
Johns Hopkins University Asthma and Allergy Centre
Manitoba Centre for Health Policy
Manitoba Institute of Child Health
McGill University Health Centre Research Institute
MITACS-NCE (Mathematics of Information Technology and Complex Systems Network)
Nakatsu Laboratory
National Health and Medical Research Council,
Australia
National High Field Nuclear Magnetic Resonance
Centre (NANUC), University of Alberta
National Institutes of Health, United States
Northern Alberta Institute of Technology
Respiratory Global Research and Training Network (GREaT), Hospital for Sick Children,
Toronto
St. John's Research Institute, Bangalore, India
Sun Centre of Excellence for Visual Genomics

(g) Associations/Foundations/Other Bodies

Assembly of First Nations
Inuit Tapiriit Kanatami
Alberta Heritage Medical Research Foundation
Alberta and NWT Lung Association
American Thoracic Society
Anaphylaxis Canada
Association des allergologues et immunologues du Québec
Association québécoise des allergies alimentaires
Asthma/Allergy Information Association
Asthma Society of Canada
British Columbia Lung Association
Canada Foundation for Innovation
Canadian Allergy, Asthma and Immunology Foundation
Canadian Association for Population Therapeutics
Canadian Cystic Fibrosis Foundation
Canadian Lung Association
Canadian Network for Asthma Care
Canadian Nurses Association
Canadian Pharmacists Association
Canadian Society of Allergy and Clinical Immunology
Canadian Society of Respiratory Therapists
Canadian Society for Epidemiology and Biostatistics
Canadian Thoracic Society
Childhood Asthma Foundation
Eva Lillian Cope Graduate Research Scholarship, McMaster University
Golden Horseshoe Biosciences Network
Hamilton Police Service
Healthway (Western Australian Health Promotion Foundation)
International Eosinophil Society
International Union against Tuberculosis and Lung Disease
Ireland Canada University Foundation
Michael Smith Foundation for Health Research, British Columbia
National Sanitarium Association of Canada
Nova Scotia Health Research Foundation
Ontario Lung Association/Ontario Respiratory Care Society
Royal College of Physicians of Physicians and Surgeons of Canada
Strauss Foundation
Wellcome Trust
World Health Organisation, Global Alliance against Chronic Respiratory Disease
World Health Organisation, Collaborating Centre for Asthma and Rhinitis

Appendix C: AllerGen Letter of Intent Application Form

AllerGen NCE Inc.
[Allergy, Genes, and Environment Network]

Please return to:
execsec@mcmaster.ca

Due Date:
March 15, 2009

REQUEST FOR LETTERS OF INTENT **Fiscal Years 2009-2012**

(Part 3 of this application, once completed, should not exceed 4 pages in length. Part 4 (budget sheet) and relevant CVs should be submitted on additional pages)

Please complete Part 1 and 2 below:

Part 1

FULL PROJECT NAME: *insert here*

PROJECT SHORT NAME: *insert here*

EXPECTED COMPLETION DATE:

- March 31, 2010
 March 31, 2011
 March 31, 2012

OTHER: *(please specify)* _____

Strategic Positioning of Proposal in Relation to AllerGen Research Priorities *(check all that apply)*

Strategic Research Programme Foci:

- Programme A – Gene-Environment Interactions**
Strategic Focus: Genetics, environmental exposures and gene-environment interactions in allergy and asthma
- Programme B – Diagnostics and Therapeutics**
Strategic Focus: Biomarkers, immune monitoring and drug development/discovery
- Programme C – Public Health, Ethics, Policy and Society**
Strategic Focus: Allergic disease management and surveillance

Cross-programmatic Research teams in priority areas:

Established Cross-programmatic Teams

- The Canadian Healthy Infant Longitudinal Development (CHILD) Study*
 Food Allergy and Anaphylaxis

Emerging Cross-programmatic Teams

- Mind-Body Interactions and Allergic Disease*
 Occupational and Work-related Allergy and Asthma

Part 2**Applicants:**

PRINCIPAL INVESTIGATOR¹: *insert ONE name and attach the CIHR registration CV (pages 1 and 2 of the Common CV)*

Name and Title:

Mailing Address

Email Address

Telephone:

RESEARCH CO-INVESTIGATORS²: *insert additional names as appropriate and attach the CIHR registration CV(s)*

Name and Title:

Mailing Address:

Email Address:

Telephone:

Name and Title:

Mailing Address:

Email Address:

Telephone:

Name and Title:

Mailing Address:

Email Address:

Telephone:

¹ A **Principal Investigator** will be an AllerGen Network Investigator (Full Member of AllerGen NCE Inc.), who holds her/his appointment at an AllerGen network member institution (Canadian university or affiliated institution). A Principal Investigator leads and is responsible for a given programmatic research project, has primary responsibility for the intellectual direction of the research, and is accountable for the reporting and achievement of deliverables for a given programmatic research project. She/he assumes administrative and financial accountability for the programmatic project and for the funding and reporting related thereto. She/he may supervise graduate students, ensures the participation of students in AllerGen NCE programmatic research projects, and assumes a leadership role with respect to collaboration and networking internally with other Network Investigators and externally with Network partners and funders.

² A **Co-Investigator** is an AllerGen NCE Network Investigator (Full Member of AllerGen NCE) employed at a Canadian university or at a Canadian not-for-profit institution or public institution which may or may not have a formal affiliation with a Canadian university. A Co-Investigator contributes substantively to aspects of the intellectual direction of an AllerGen NCE funded programmatic research project, and provides a leadership role in aspects of the programmatic research project and in support of a Principal Investigator with respect to collaboration and networking with other Network Investigators and externally with Network Partners and funders. She/he may, at the discretion of the Principal Investigator, have some responsibility for the financial aspects of the research activities and for the supervision of graduate students engaged in Network research. Co-investigators do not include trainees, research associates/assistants or foreign citizens.

Part 3: Please outline briefly, and in no more than 4 pages, the following (*use a font size of 12 point, black ink. Six lines per inch. No condensed type or spacing*):

1. The proposed research question(s).
2. Purpose/objectives of the proposed research.
3. Relevance of the proposed activity to AllerGen's mission and strategic research programme goals, objectives and priorities.
4. Degree to which the proposal builds upon existing AllerGen research and research platform investments to date or is justifiable as a new initiative based on the value-added it represents for AllerGen's overall research portfolio.
5. Methodological approach and use of research platforms.
6. Research deliverables and pertinent milestones, timeframes to March 31, 2012 (indicate whether the project will extend beyond 2012).
7. Planned networking across disciplines and research sites (universities, hospitals, institutes).
8. Evidence of research experience and leadership capacity of the team (identify the research team collaborators or prospective collaborators involved and briefly outline their role and previous track record of leadership within AllerGen if applicable).
9. Plans for external research partnerships within industry, government and non-government organisations, not-for-profit agencies, advocacy groups, healthcare providers etc. (identify the partners or prospective partners involved and briefly outline their role, use of their facilities, resources).
10. Opportunities for knowledge translation and exchange and/or technology transfer of the research proposed along a continuum leading to social or economic impacts.
11. Progress made on AllerGen funded projects to date (if appropriate). List published papers, abstracts, additional funding sources, disclosures, patents, clinical and policy guidelines, etc. on a separate page (this page does not count towards the four page limit)
12. Contribution to training of highly qualified personnel (briefly summarize the number and level of trainees potentially involved and the experience/expertise afforded them by involvement in Network-funded research).
13. Project management strategy (briefly summarize how this project will be managed and deliverables tracked).

Part 4: Budget Summary

12. The budget summary should be presented on a separate page in addition to the four pages requested above.

Budget format (Table updated March 10, 2009):

	BUDGET SUMMARY	CASH	IN KIND
1	Total AllerGen NCE funding requested 2009-2012 (1 April 2009 to 31 March 2012):	\$0	\$0
2	Additional funds expected from external partners: <i>Insert row per named partner</i>	\$0	\$0
		\$0	\$0
3	Other funding support expected (specify):	\$0	\$0
4	Total funds:	\$0.00	\$0.00

Appendix D: AllerGen Full Proposal Application Form

FULL PROPOSALS 2009-2012 APPLICATION GUIDE

Overview

Research teams invited to submit full proposals for AllerGen research funding for one to three-year grants (2009/10 to 2011/12) are encouraged to submit project budgets in the range of approximately \$50,000 - \$200,000 per annum. AllerGen funding should be considered “seed” funding that facilitates the research team’s ability to leverage significant additional funding from research partner organizations and other non-CIHR sources of support.

Review Process

Full proposals must be received in hard copy and electronically by May 31, 2009, before midnight EST. Proposals will be forwarded for external review to members of AllerGen’s International Scientific Excellence Advisory Committee (ISEAC). While all proposals will be provided to all reviewers, two reviewers and a reader will be assigned specific responsibility to review individuals proposals and asked to provide specific comments, ensuring that each Full Proposal receives at least three independent detailed reviews. Non-researcher members of AllerGen’s Research Management Committee (RMC), will also participate in the reviews, but will focus exclusively on the evaluation of full proposals against the criteria related to the strategic fit with Network objectives, contributions to Network research to date, plans for networking, partnerships, commercialization and knowledge translation and contributions to the development of HQP.

Evaluations will proceed according to an agenda prepared by the Chair; consensus will be sought for funding recommendations and level according to standardised procedures used by NSERC and/or CIHR grant committees. All proposals will be provided to and discussed by the full Committee and scored collectively. The Committee’s consensus comments will be noted in point format according to the selection criteria, and a report made available to the applicants.

A report from the ISEAC will be sent directly to the AllerGen Board of Directors and the Research Management Committee. The RMC will meet to review the ISEAC recommendations and finalize its funding recommendations for the Board of Directors.

Notification of Award will be sent to successful applicants following Board approval. While proposals may include budget requests of up to three years in duration (full 36 months), funding will be awarded on a quarterly basis, subject to satisfactory progress towards approved milestones and timeframes and/or specific conditions, communicated to the applicant by the Programme Leaders and/or RMC. Successful applicants will sign an Acceptance of Award, including agreement to make revisions to the proposal, if requested, as well as the AllerGen Network Agreement Researcher Acknowledgement form – an appendix within the AllerGen Network Agreement. In addition, each university to which AllerGen research funding will flow is required to sign the AllerGen Network Agreement before funds are issued.

The progress of each proposal will be monitored on an on-going basis, with an in-depth baseline report required after funding year 1 and a final report required upon completion of the project. Principal investigators will provide a detailed report, including major

accomplishments, impediments to progress or changes in direction, and a description of any work to be completed, including—if fundamentally altered from the original application—approaches to be taken, research team, trainees, partnerships, milestones and timeframes. Baseline progress reports will be reviewed by the RMC. *In the event that investigators have not performed to standard or delivered on stated objectives of projects, termination of funding will be considered by the RMC.*

Priority will be placed on projects that are relevant to the strategic priority issues identified for research programmes and teams; build upon current AllerGen research; utilize partner organizations, core facilities and platforms; are highly translational; and are likely to achieve deliverables that lead to innovations arising from new knowledge and new applications of existing knowledge. Relevant research proposals not directly covered by the above parameters will be eligible for consideration, but may not be treated as a priority within the selection process.

Responsibilities of Applicants

Applicants must:

- Confirm their eligibility by consulting the Grants and Awards Guides of the CIHR.
- Identify the appropriate AllerGen Research Programme or team with which the research project is aligned develop their full proposal in consultation with the appropriate AllerGen Research Leaders.
- Submit a complete and signed application package (including copies, as requested), strictly adhering to format and content guidelines. Material submitted in previous applications is NOT available to reviewers. Non-adherence to guidelines and page limitations may result in rejection of the application.
- Present all documentation in one of the official languages (English/French) – Please note that most ISEAC reviewers will be non-Canadian.
- **Submit the application by the deadline of May 31, 2009 to the AllerGen Administrative Centre.**

Definition of Applicants/ Co-applicants

A **Principal Investigator** will be an AllerGen Network Investigator (Full Member of AllerGen NCE Inc.), who holds her/his appointment at an AllerGen network member institution (Canadian university or affiliated institution). A Principal Investigator leads and is responsible for a given programmatic research project, has primary responsibility for the intellectual direction of the research, and is accountable for the reporting and achievement of deliverables for a given programmatic research project. She/he assumes administrative and financial accountability for the programmatic project and for the funding and reporting related thereto. She/he may supervise graduate students, ensures the participation of students in AllerGen NCE programmatic research projects, and assumes a leadership role with respect to collaboration and networking internally with other Network Investigators and externally with Network partners and funders.

A **Co-Investigator** is an AllerGen NCE Network Investigator (Full Member of AllerGen NCE) employed at a Canadian university or at a Canadian not-for-profit institution or public institution which may or may not have a formal affiliation with a Canadian university. A Co-Investigator contributes substantively to aspects of the intellectual direction of an AllerGen NCE funded programmatic research project, and provides a leadership role in aspects of the programmatic research project and in support of a Principal Investigator with respect to

collaboration and networking with other Network Investigators and externally with Network Partners and funders. She/he may, at the discretion of the Principal Investigator, have some responsibility for the financial aspects of the research activities and for the supervision of graduate students engaged in Network research. Co-investigators do not include trainees, research associates/assistants or foreign citizens.

A **Research Associate** will be a research collaborator who makes a substantial intellectual contribution to the research project and/or to the implementation strategy and uptake of Network results at the request and the direction of a Principal Investigator. She/he is responsible for communication and reporting to an AllerGen NCE Network Investigator. A Research Associate may, but does not need to, be affiliated with a Participating Institution. Examples include postdoctoral fellows, graduate students, international collaborators, and research assistants.

Technical Staff will be individuals, normally but not necessarily in the employ of an AllerGen NCE Participating Institution, who, at the direction of an AllerGen NCE Network Investigator, provides a special technical service to facilitate the project research. Her/his intellectual contribution to Network research is limited to technical services and support of such a nature so as to preclude such individuals from being classified in one of the other roles outlined above.

APPLICATION FORM SUMMARY AND INSTRUCTIONS:

General Instructions

Please insert the name of the Principal Investigator into the application document footer, and the assigned AllerGen Identification Code and Project Short Name into the header of the document. The AllerGen Identification code can be found on the letter of invitation from AllerGen.

Use single-spaced type, NO smaller than 12 point; print must be of letter quality and easy to read; condensed type or spacing is not acceptable. Margins must be one inch around the page. Page limitations must be observed and additional pages may NOT be added unless specified.

Please provide the signed original, plus 22 hard copies of Application Parts I through V. You must also provide 2 hard copies of the full common CV for the Principal Investigator, as well as for each named Co-investigator. In addition, please enclose 2 complete copies of your application (signatures not required) on a CD or DVD.

All documents (see exception for Letters of Support) must be received at the address indicated below by May 31, 2009, no later than midnight EST.

Attention: AllerGen NCE Inc. – RFP 2009-2012
McMaster University
1200 Main Street West
MDCL 3120
Hamilton, ON L8N 3Z5

Questions may be directed to 905-525-9140, ext 26502 OR dianaroyce@sympatico.ca

PLEASE NOTE: Non-adherence to guidelines and page limitations may result in rejection of the application.

PART I: GENERAL

Full Project Name - *Full project title should adequately describe the proposed project*

- 1.1 **Project short name** - *Short title should be a maximum of 75 characters, including spaces*
- 1.2 **Key words describing this proposal** - *Provide a maximum of 10 key words that describe this proposal. Separate words with commas.*
- 1.3 **Expected completion date** (*identify one*) - *Initial grants may be up to three years in duration to March 31, 2012*
- 1.4 **Relevant Research Programme** - *Indicate the primary programme in which the proposed project best fits. Select one.*

Strategic Research Programme Foci:

- Programme A** – *Gene-Environment Interactions*
Strategic Focus: Genetics, environmental exposures and gene-environment interactions in allergy and asthma
- Programme B** – *Diagnostics and Therapeutics*
Strategic Focus: Biomarkers, immune monitoring and drug development/discovery
- Programme C** – *Public Health, Ethics, Policy and Society*
Strategic Focus: Allergic disease management and surveillance

- 1.5 **Secondary Programme or Team** - *Specify if relevant.*

Cross-programmatic Research teams in priority areas:

Established Cross-programmatic Teams

- The Canadian Healthy Infant Longitudinal Development (CHILD) Study*
- Food Allergy and Anaphylaxis*

Emerging Cross-programmatic Teams

- Mind-Body Interactions and Allergic Disease*
- Occupational and Work-related Allergy and Asthma*

- 1.6 **Proposed Partner Organization(s) and Key Contacts.** *Indicate any academic/private/government/other partnership(s). Provide the name and address of the organization, the key contact person, their position and e-mail. Attach **letters of support** for each partnership listed and insert additional names as required. Letters of Support not accompanying the application will be accepted up to June 1, 2009.*

Proposals to use the CHILD Study data must be accompanied by a letter of Support from the CHILD Study Executive.

1.7 **Primary Location(s) where research will be conducted.** *Specify site(s) and site address(es).*

1.8 **Certification / Requirements**

a. Research Ethics: *If the proposed research involves biohazards, humans, human embryonic stem cells or animals, AND is funded by AllerGen, certification of approval by your institutional certification committee must be provided to AllerGen prior to the release of funds.*

- Yes, I expect that this research will require an ethics review
 No, I do not expect that this research will require an ethics review

b. Environmental Assessment: *AllerGen will use the NSERC policy for determining need for environmental assessment. If your proposal involves an undertaking as described in http://www.nserc-crsng.gc.ca/doc/NSERC-CRSNG/enviroassess-enviroeval_eng.pdf and http://www.nserc-crsng.gc.ca/OnlineServices-ServicesEnLigne/pdf/F101_e.pdf (Form 101 Appendix B page 27, Canadian Environmental Assessment Act, Pre-Screening Checklist) and your project is selected for funding by AllerGen, you will be required to complete an Environmental Assessment Impact Statement and the Canadian Environmental Assessment Act, Pre-Screening Checklist. These documents will be submitted to AllerGen for internal review and approval prior to the release of AllerGen funds.*

- Yes, I expect that this research will require an environmental impact review
 No, I do not expect that this research will require an environmental impact review

1.9 **Budget Summary:** *Provide the total amounts requested for years 2009-10 through 2011-12 as applicable.*

1.10 **Signatures:** *Required signatures are listed below.*

1. Principal Applicant
2. Co-Investigators named on proposal
3. Vice-President Research of the host institution of the Principal Applicant(s)(PIs and Co-Investigators)

PART II: LAY RESEARCH SUMMARY

*Provide a summary of your research proposal, in plain language that will be understandable to a **multi-sectoral lay audience**. The summary must be no longer than **one page** in length.*

PART III: APPLICANTS AND RESEARCH PERSONNEL**3.1 Principal Investigator** - insert ONE name and attach CIHR Common CV

Principal Investigator Name and Institution	Address, Phone and Email

3.2 Research Co-Investigators - Projects must involve co-investigators from at least one other university or setting. Insert additional names as appropriate and attach CIHR Common CV(s) or equivalent for each name.

Provide a 2-3 line description of the role of each project team member listed. Teams should be multidisciplinary and comprise members from academia and the receptor community.

Co-investigator(s) Name and Institution	Address, Phone and Email	Role

Insert rows as needed

3.3 Research Collaborators/Industry/Public/Non-profit Sector Partner Personnel

Collaborators/ Industry/ Public/Non-profit Sector Partner Personnel Name and Institution	Address, Phone and Email	Role

Insert rows as needed

3.4 Research trainees - Research trainees may include Postdoctoral, Graduate, Undergraduate or Other (specified). Please note that research trainees are regarded as a very high priority for the Network in its selection of proposals for funding.

Research Trainees Name, Institution, email	Level of Study	Role

Insert rows as needed

3.5 **Technical Staff** - *insert additional names as required.*

Technical Staff Name and Institution	Address, Phone and Email	Role

Insert rows as needed

PART IV: RESEARCH PROPOSAL

Applicants should provide a clear, concise description of their proposed research, **using the section numbers outlined below**. Part IV, sections 4.1 to 4.8 must be detailed in a maximum of ten pages. Use single-spaced type no smaller than *12 POINT*; print must be of letter quality and easy to read; condensed type or spacing is not acceptable; margins must be one inch around the page; page limitations must be observed. Non-adherence to guidelines may result in rejection of the application.

Further clarification / details of individual sections may be obtained by consulting AllerGen Programme Leaders, the Scientific Director or the Managing Director of AllerGen.

- 4.1 **RESEARCH QUESTION:** *State the proposed research question.*
- 4.2 **RESEARCH OBJECTIVES AND SIGNIFICANCE:** *State the objectives and significance of the outcomes of the proposed research.*
- 4.3 **RELEVANCE:** *Describe the relevance of the proposed activity to AllerGen's mission and strategic research programme goals, objectives and priorities.*
- 4.4 **VALUE:** *Describe the degree to which proposal builds upon existing AllerGen research and research platform investments to date or is justifiable as a new initiative based on the value-added it represents for AllerGen's overall research portfolio.*
- If applicable, describe progress made on related AllerGen-funded projects to date. Provide a detailed list of published papers, abstracts, additional funding sources, disclosures, patents, clinical and policy guidelines, etc. as an appendix (this appendix does not count towards the page limit for this section of the application).*
- 4.5 **METHODOLOGICAL APPROACH:** *Briefly summarize the methodological approach and use of research platforms (if applicable).*
- 4.6 **RESEARCH DELIVERABLES AND MILESTONES:** *Briefly summarize the research deliverables (at the conclusion of the project) and associated milestones/timeframes over the duration of the project to March 31, 2012 and indicate whether or not the project will extend beyond 2012.*

(recommended length for sections 4.1- 4.6 inclusive: six to seven pages)

4.7 PROJECT NETWORKING: *Described the networking planned for this project across disciplines and research sites (universities, hospitals, institutes). Projects that represent collaborative efforts of several Investigators in more than one discipline (e.g., combinations of biomedical science, natural sciences and/or the social sciences) and/or at more than one Institution and/or with involvement of Partners, are considered critical to the development of AllerGen, and thus will tend to be seen as advantageous over stand-alone, single Investigator, single-discipline and/or single-Institution proposals.*

4.8 PROJECT PARTNERSHIPS: *Identify the partners or prospective partners involved and briefly outline their roles, contributions to the research, and contact details. External research partnerships with industry, government and non-government organisations, not-for-profit agencies, patient advocacy groups, healthcare providers are a central feature of AllerGen-supported research initiatives.*

Please provide a signed letter of support on the letterhead of each partner organization detailing the extent of their proposed collaboration and/or their cash and in-kind contribution towards this project. The letter should specifically include reference to AllerGen, the proposed project, and any conditions placed on funding. Greater weight will be given to partnerships that would clearly not have come about in the absence of the proposed AllerGen project.

If partnership funding has not been finalized at the time of application, please specify how partners will be confirmed within six months of launching the project. Greater weight will be given to projects which obtain letters of support from partners/receptors than to those which do not.

Name of Partner	Nature of participation	Contribution (CA\$)		Letter yes /no
		Cash	In-kind	
Total value of partnerships				

Insert rows as needed

(recommended length for section 4.7 and 4.8: one page)

4.9 KNOWLEDGE TRANSLATION – KNOWLEDGE COMMERCIALIZATION POTENTIAL: *Indicate research receptor organizations, target audiences, including sector, industry/organizations and beneficiaries related to the application/ development/use/ implementation of your research results. Describe the opportunities for knowledge translation and exchange and/or technology transfer of the research proposed along a continuum leading to social or economic impacts.*

Name of Research Receptor	Opportunity for knowledge translation, exchange, exploitation, commercialization and projected social and economic impacts	Letter of Support for Proposal yes /no

Insert rows as needed

(recommended length for sections 4.9: one page)

- 4.10 **HIGHLY QUALIFIED PERSONNEL (HQP):** *Briefly summarize the number and level of trainees potentially involved and the experience/expertise afforded by involvement in Network-funded research. Indicate, where appropriate, co-supervision of trainees and experience to be provided in investigators' laboratories in networked projects. AllerGen salary funding is primarily aimed at trainees rather than research assistants or laboratory technicians. Especially important from AllerGen's perspective is the appropriation of funding for trainees at all levels to be co-supervised by several Investigators involved in multidisciplinary, networked projects. Development of HQP is fundamental to AllerGen, and represents a critical criterion against which projects will be assessed for funding eligibility.*

(recommended length for section 4.10: one page)

- 4.11 **PROJECT LEADERSHIP AND MANAGEMENT** *(not included in page limitation)*
Briefly summarize the research experience and leadership capacity of the team (identify the research team collaborators or prospective collaborators involved and briefly outline their role and previous track record of leadership within AllerGen if applicable) and how this project will be managed and deliverables tracked
- 4.12 **REFERENCES** *(not included in page limitation)*
- 4.13 **TABLES, FIGURES** *(not included in page limitation) - optional*
- 4.14 **APPENDIX of PROGRESS TO DATE** *(not included in page limitation) – to be provided only if applicable re: section 4.4*
- 4.15 **LETTERS OF SUPPORT** *From Corporate / Public / Not-For-Profit / Healthcare / CHILD Study Executive (if applicable) / Other Research Partners (not included in page limitation). Attach letters of support for each partnership listed in Part I. Letters of Support not accompanying the application will be accepted up to June 1, 2009.*

PART V: BUDGET

BUDGET July 1, 2009 – March 31, 2012

All budget documents to be completed are provided in an attached Excel file. Please select the budget template aligned with the most relevant of the seven AllerGen research thrusts (Programmes or Cross-cutting Teams). Please enter the name of the Principal Applicant, the short project title and the AllerGen ID Code at the top of section 1, where indicated. Figures provided must be in Canadian funds.

*Spreadsheet **Section 1:** AllerGen funds requested for each year of funding*

*Spreadsheet **Section 2:** Cash and in-kind contributions from External Partners*

Spreadsheet Section 3: Existing funds held and/or applied for, and leveraged in support of the AllerGen proposal

Cash and in-kind contributions, held or applied for, relevant to this research proposal from other sources (e.g., Tri-Council and other federal, provincial, municipal, hospital and international peer-reviewed research grants; academic, public and/or private sector partners) for each part of the budget must be specified. AllerGen will pay particularly close attention to the use and leveraging of multiple sources of funding available to Investigators, in assessing the funding envelope requested from the Network. Thus, for example, research assistants and technical support staff who might already derive partial to full support from existing infrastructure funds available to individual Investigators should not be duplicated in the funding requested; networked, co-supervised traineeships in collaborative projects across disciplines, sectors and/or Institutions will be considered to represent true added-value, and be considered critical to both AllerGen's and the NCE's missions. Funding currently reported as leveraged against currently supported AllerGen projects cannot be double-counted in this report.

5.1 Budget Justification:

Please provide a complete, detailed budget justification for the funds requested from AllerGen. Please note especially whether any overlap exists with, and how Network funds will be used to add value to, existing and/or applied for funds from other sources, as specified above. This justification must not exceed two pages in length.

The RFP and related forms are also available for downloading from the AllerGen web-site at:

www.allergen-nce.ca/Research/RFP2009-2012.html