

Occupational Cancer Research Centre

Three Year Evaluation Report Self-Evaluation

July 29, 2012 [with Updated appendices October 11, 2012]



Occupational
Cancer
Research
Centre

Towards a cancer-free workplace

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1. The Occupational Cancer Research Centre

The Occupational Cancer Research Centre (OCRC) was established in 2009 and is the first research centre of its kind in Canada. OCRC is funded by the Workplace Safety and Insurance Board's Research Advisory Council (WSIB-RAC), Cancer Care Ontario (CCO), and the Ontario Division of the Canadian Cancer Society (CCS), and was founded with the strong support of the United Steelworkers union. Representatives from these four organizations came together with the common objective of forming a research organization to fill the gaps in our knowledge of work-related cancers.

This Centre, unlike the other Centres of Research Excellence funded by the WSIB-RAC (the Centres of Research Expertise in the Prevention of Musculoskeletal Disorders and Occupational Cancer [CRE-MSD and CRE-OD]), is not housed within a university, but within CCO. This decision was based upon a sense of urgency from multiple stakeholder groups including the Steelworkers union and CCS to get the Centre established. Research into identifying the causes of occupational cancer and other cancer-related research, such as on prevention measures, had been sorely underfunded and neglected. In addition, there was no university in Ontario with a faculty member focused primarily on occupational cancer or with the resources to support the founding of such a Centre, and it was thought that basing the Centre at CCO would facilitate collaborations with researchers at multiple universities. Fortunately, there was very strong support within CCO from the CEO, the VP Population Studies and Surveillance, and the Director of Surveillance, and CCO offered to not only host the Centre without delay, but also contribute to its funding.

Major Milestones

a. Creation of the Steering and Scientific Advisory Committees

In the Centre's first year, a Steering Committee was established with representatives from the four founding organizations, the Ministry of Labour, CRE-OD, and industry. A Scientific Advisory Committee was also formed with experts in occupational cancer research from across Canada, and foundational documents were created including the Five Year Strategic Plan.

b. The hiring of Aaron Blair as the interim director

Dr. Aaron Blair, the former Chief and a current Scientist Emeritus with the Occupational and Environmental Epidemiology Branch of the Division of Cancer Epidemiology and Genetics of the U.S. National Cancer Institute, accepted the role as Interim Director. Dr. Blair is internationally recognized as a leader in occupational cancer epidemiology and immediately increased the visibility of the Centre. With the guidance of the Steering Committee and the Scientific Advisory Committee, Dr. Blair led a number of initiatives including defining the Centre's core research focus, initiating the research program, recruiting a director, developing partnerships with the occupational cancer research community in Ontario, Canada, and abroad, and engaging stakeholders with a survey to give them the opportunity to have input on the research priorities. Three CCO scientists – Loraine Marrett, Shelley Harris, and John McLaughlin – also became scientists of the Centre. A number of projects were initiated that included literature reviews and analyses of the Cross-Canada Study of Pesticides that drew on Dr. Blair's expertise and utilized his international connections. These projects were funded out of the Centre's core funding and played an important role in establishing the direction of the Centre's research program.

c. Creating a strategic plan

The Centre's Steering Committee established a Five Year Strategic Plan with four strategic goals: to build a research program into the prevention of occupational cancer; to develop research capacity by building the base of researchers and students involved in occupational cancer research; to deliver and exchange new knowledge so that it is accessible to workplace decision-makers; and to build a sustainable Centre. This document continues to guide the work of the Centre in prioritizing research projects, mentoring junior staff and students, engaging with stakeholders in the research process, and building the Centre.

d. Recruitment of a permanent director

Dr. Paul Demers became the Director of OCRC in September 2010. Dr. Demers, an epidemiologist with a strong background in occupational cancer, was a professor and the Director of the School of Environmental Health at the University of British Columbia (UBC), and the Scientific Director of CAREX Canada, a project funded by the Canadian Partnership Against Cancer (CPAC). As well as Director of OCRC, he is a Senior Scientist at CCO and a Professor at the University of Toronto, while maintaining his role at CAREX and a Clinical Professor appointment at UBC. Paul is internationally recognized for his expertise on the health effects of workplace exposures and has sat on many expert panels, including the International Agency for Research on Cancer working groups that evaluated carcinogens such as dusts and fibres, firefighting and formaldehyde. Paul has a long history of cross-Canada collaborations with researchers in the field of occupational cancer. Attracting someone of his caliber was certainly a sign of the credibility of the Centre and its potential impact, but it was also a necessity for the Centre's future development. The seamless transition from an interim to a permanent director has helped to accelerate the momentum of the Centre.

e. Establishing an ambitious research program

On his arrival, Paul accelerated the tempo by initiating a number of significant projects with the support of the OCRC Scientists and newly hired Research Associates and in collaboration with external researchers, both in Ontario and elsewhere. This increased collaboration with outside scientists that are closely linked to OCRC is the beginnings of a network of researchers that OCRC hopes to formalize in the near future.

With the resources and collaborations available, OCRC has engaged in an ambitious research program. The breadth and depth of the Centre's research program now extends across the three major themes of the Centre's research: the investigation into the causes of occupational cancer, the surveillance of cancer and exposure to carcinogens by occupation and industry, and workplace intervention/prevention research.

f. Hiring of an Associate Director and expanding research capacity

Dr. Desre Kramer was hired as Associate Director in June 2011 and became full-time in January 2012. Dr. Kramer's PhD is in adult education, and she has a strong background in occupational health and safety. Prior to coming to OCRC, Dr. Kramer was Associate Director of OCRC's sister organization, CRE-MSD. She has adjunct status at the University of Waterloo, Ryerson University and the Institute for Work & Health. She has a strong national reputation for her research and practice in the area of knowledge translation and exchange. Her research has been in the construction, transportation, and manufacturing sectors where she has focused on the diffusion of innovations and the transfer of evidence-based knowledge on occupational health and safety to workplaces. With the hiring of an Associate Director, the Centre continued its rapid growth in

the depth and breadth of its program of research and in the number of staff and students to support the research.

2. The Research Team

At this three-year point in time, the OCRC research team is made up of a multidisciplinary group of Scientists and Research Associates with backgrounds in the fields of epidemiology, biostatistics, occupational hygiene, chemistry, sociology, environmental studies and political science, and strengths in both quantitative and qualitative methods. This multidisciplinary team is necessary in order for the Centre to fulfill its broad mandate of policy-relevant research and knowledge translation and exchange.

The Centre's Scientists include Paul Demers and Desre Kramer as well as four other Scientists. Shelley Harris (based primarily in the Research Unit of CCO) leads several case-control studies and plays a key role in the Cross Canada Study of Pesticides. Loraine Marrett (Director of CCO's Surveillance Unit) is the principal investigator on the Ontario Uranium Miners Cohort and advises on surveillance studies. John McLaughlin (former CCO Vice President and Senior Scientist and currently with the Lunenfeld Institute and Public Health Ontario) is the Principal Investigator on several case-control studies and also leads an antineoplastics research project at OCRC. Minh Do (former CCO Research Associate and currently an epidemiologist with the Public Health Agency of Canada [PHAC]) is involved in all the Centre's radiation-related projects. A complete listing of the Scientists' OCRC projects is provided in Appendix 1.

In the last year, as the research program has expanded, the Centre has hired a passionate and enthusiastic staff. They create a multidisciplinary team that is presently comprised of one post-doctoral researcher, Anne Harris, and five Research Associates (RAs): Ann Del Bianco (environmental studies), Kate Jardine (chemistry), Priyanka Raj (occupational hygiene), Manisha Pahwa (epidemiology), and Kris Moore (political science). There are also two part-time Research Associates: Karin Hohenadel (epidemiology) and Victoria Arrandale (occupational epidemiology and hygiene). Ann Del Bianco and Victoria Arrandale completed their PhDs in March of this year, while the remaining Research Associates are all Masters trained. A list of the projects that the Research Associates are involved in can be found in Appendix 3.

In order to increase its capacity the Centre has developed a group of "affiliated researchers" who are more closely related to the work of the Centre than other research-project collaborators (see Appendix 2). At the present time the Centre has four affiliated researchers. Aaron Blair continues to lead on studies initiated while he was Interim Director and is particularly involved in the Cross-Canada Study of Pesticides and in a new project to pool this data with similar U.S. studies. Paul Villeneuve collaborates closely with Shelley Harris on several case-control studies and is also involved in the Ontario uranium miner's cohort and our national surveillance work. Kristan Aronson is a co-investigator on the Centre's shift work projects. Jack Siemiatycki is a co-investigator on the Centre's project on the classification of carcinogens and also a collaborator on the Synergy Project. Aaron, Kristan, and Jack also serve on the Centre's Scientific Advisory Committee. The Centre is developing a strategy to expand the number of affiliates and create stronger links between OCRC and its affiliated researchers. One option being considered is funding a pilot-project seed program – a program that has been successfully used by CRE-MSD and CRE-OD to build their researcher networks.

The administration of the Centre is quite simple. The Director is responsible for the overall leadership and scientific direction of the Centre, including strategic planning, and directly

supervises the trainees of the Centre as well as the Associate Director. The Associate Director directly supervises the RAs and the administrative assistant, as well as leading stakeholder relations and overseeing finance and human resources. Marjorie Pagcu, our administrative assistant, is responsible for day-to-day finance and administrative work and is the only purely administrative member of the staff. Other smaller administrative duties, such as management of the website, are distributed among the RAs.

Despite what has been achieved in building the research team during the last three years, we are equally aware of the small number of researchers who have made occupational cancer the focus of their career. As the Centre's post-doctoral fellow makes plans to take up a faculty position at Ryerson University's School of Occupational and Public Health, one of the major challenges in the fourth year of the Centre will be to identify another post-doctoral fellow or senior staff member with expertise in occupational cancer epidemiology who can take leadership on research projects. We have twice formally launched a search for a Senior Research Associate and have found it very difficult to identify Canadian candidates with a strong background in this field. We have hired staff with backgrounds in epidemiology and environmental science with the expectation that they will develop content knowledge of the field over time, but finding a senior research associate who is already an expert in the field of occupational cancer is a challenge. We are presently extending our search to the United States and Europe, but our inability to offer long-term, permanent positions is an impediment to recruiting staff who must make the commitment to relocate from elsewhere.

3. The Research Program

The Centre's research program now extends across the three major focus areas established by the Centre's strategic plan: 1) identification of causes of cancer in the workplace; 2) surveillance of occupational cancers and workplace exposures; and 3) intervention research to develop and evaluate prevention and exposure reduction strategies and inform policy decision-making. Research projects by category are described in Appendices 5-7. Research funding is described in detail in Appendix 8. The Centre has developed a very diverse set of research projects that reflects the priorities of our stakeholder community, which were identified through a stakeholder survey conducted in the Centre's first year (see Hohenadel et al, 2011 in Appendix 9). The survey requested that stakeholders identify their highest priorities in research into occupational cancer. The OCRC received 177 responses to its survey from academic, healthcare, policy, industry, and labour-affiliated stakeholders. The priority issues that OCRC stakeholders identified included workplace exposures such as chemicals, respirable dusts and fibres (e.g. asbestos), radiation (e.g. electromagnetic fields), pesticides, and shift work; and occupations such as miners, construction workers, and healthcare workers.

a. The causes of occupational cancer

The priorities identified by the stakeholder survey were further refined through consultation with the Steering and Scientific Committees. In determining its research priorities, the OCRC has also examined the occupational cancer research priorities of internationally respected agencies such as the International Agency for Research on Cancer (IARC) and the National Occupational Research Agenda (NORA) of the U.S. National Institute for Occupational Safety and Health (NIOSH), which have both recently published reports on their priorities. These research priorities are reflected in the Centre's program of research.

The Centre's initial projects on the causes of workplace cancer primarily utilized existing datasets in order to quickly establish the research program and build collaborations (see Appendix 5). For example, we are investigating the association between pesticide exposure and Hodgkin and non-Hodgkin lymphoma, multiple myeloma, and soft tissue sarcoma using data from the Cross Canada Study of Pesticides and Health. This case-control study uses data from six provinces and we are in the process of pooling it with data from four Northern U.S. states. It is in collaboration with researchers at the University of Saskatchewan, BC Cancer Agency, and U.S. National Cancer Institute. Another example is the Toronto lung cancer case-control study. The OCRC coded the previously unused work history data, which has allowed us to both examine occupational associations with lung cancer in Toronto and to contribute data from this study to the Synergy project. Synergy is a 14-country effort coordinated by IARC to better examine occupational cancer issues requiring large numbers, such as synergistic effects. These two studies have provided excellent platforms for student projects that can be completed in 4-12 months and have raised the visibility of the OCRC both within Canada and internationally.

The OCRC has a number of other ongoing etiologic projects. We are analysing the extended follow-up of the Ontario Uranium Miners Cohort to examine the cancer risks associated with radon in collaboration with the Canadian Nuclear Safety Commission (who also funded the extended follow-up). Occupational exposure to diesel and gasoline emissions and the incidence of colorectal and bladder cancer are being examined using data from the National Enhanced Cancer Surveillance System of the Public Health Agency of Canada (PHAC), in collaboration with researchers from PHAC, Health Canada, and the Institut Armand-Frappier of the Université du Québec. A new case-control study on the risk of breast cancer in young women due to exposure to environmental contaminants and occupational exposures was recently funded. Lastly, a feasibility study of the health risks among nuclear workers in Ontario who are exposed to internal sources of ionizing radiation is underway. All four of these projects are externally funded.

b. The surveillance of occupational cancer

The second research focus is on occupational cancer and carcinogen surveillance (see Appendix 6). Canada does not currently have any system in place for the ongoing surveillance of occupational cancer. We are working with Statistics Canada and Health Canada on an important new linkage of the 1991 Canadian Long-form Census data to the Canadian Cancer Registry, which has created a dataset that includes occupation, industry, and other data from the long-form census with cancer follow-up through 2003 (soon to be 2008) on over 2.1 million people. This linkage will allow us to investigate many associations between jobs or substances and cancer, such as cancer among wood workers, firefighters, shift workers, and agricultural workers. Internationally we are collaborating with the Nordic Occupational Cancer project, which uses very similar census linkage approaches for surveillance. This project has also turned into an excellent platform for student projects.

We have also launched a pilot study to develop a new model of occupational cancer surveillance for Ontario using methods developed by researchers in Alberta and British Columbia. The Workplace Safety and Insurance Board's lost-time claims data will be used to link occupational information to the Ontario Cancer Registry to create a large database of workers in the province. The goal of this innovative project will be to create a dataset of similar size to the Census cohort, which will increase our ability to examine the risks in Ontario industries. Anne Harris, the OCRC post-doctoral fellow, is leading this study. This feasibility project will adapt and test how well this model for linking the records will work in Ontario.

We are increasing our work in the area of exposure surveillance to examine current and historical exposure levels to known and suspected carcinogens to identify potentially high-risk groups to target for prevention or further study. We are analyzing data collected by the Ontario Ministry of Labour between 1981 and 1996 (after which collection of exposure measurements was dramatically cut back) to determine patterns and trends of exposure to many known and suspected carcinogens such as asbestos, benzene, tetrachloroethylene, silica and wood-dust. As well, OCRC and CAREX Canada (which are closely linked through OCRC's Director, who is also the Scientific Director of CAREX Canada) are collaborating closely to estimate the number of Ontario workers exposed as well as their levels of exposure and to investigate new occupational exposure issues.

An upcoming major project focuses on estimating the human and economic burden of occupational cancer in Canada. The project will have strong policy implications for prevention initiatives. By producing estimates of the human impact (deaths, sickness, and reduced quality of life) and the economic costs specifically associated with exposure to occupational carcinogens, the OCRC will provide data that is necessary to both increase awareness and drive prevention. Most significantly, these estimates will help to focus on priority areas where the greatest number of people could be impacted by intervention efforts. We are waiting for a funding decision from the Canadian Cancer Society Research Institute (CCSRI) for a national team grant on this project that we will conduct in collaboration with Ontario Division of the CCS, but preliminary work has already begun and funding will be sought from elsewhere for this high priority project if the outcome is disappointing.

c. Interventions and prevention of occupational cancer

Our third research focus is intervention and prevention-related research (see Appendix 7). While all of the research performed at the OCRC adds to the pool of knowledge that can be used to target prevention strategies, the OCRC has a number of initiatives aimed more specifically at workplace prevention. As change can be initiated from many levels, these projects have goals that span a broad range including raising awareness among workers and employers, instigating policy changes, and actively testing practical primary strategies to implement change.

The Centre has developed a number of small prevention-oriented projects. For example, the Centre has recently performed a comparison of Ontario's Occupational Exposure Limits for Carcinogens (OELs) to those of other jurisdictions in Canada and elsewhere. A report on our findings was submitted to the Ministry of Labour for consideration as part of its periodic review of Ontario OELs and has also attracted interest in our broader stakeholder community. In the planning stage are a cross-jurisdictional comparison of smoking in the workplace and its effect on smoking rates, and a cross-jurisdictional comparison of legislation and enforcement surrounding the clean-up of abandoned worksites contaminated by asbestos. We have produced another report on trends in compensated workplace fatalities in Ontario and Canada to raise awareness that, despite the fact that only a small proportion of workplace cancers are compensated, there are currently twice as many workplace cancer-related fatalities per year as injury fatalities.

As another example, with the help CAREX Canada and the US Agency for Toxic Substances and Disease Registry we have identified at least 12 locations in Ontario where 177,000 tonnes or more of asbestos-contaminated vermiculite from Libby, Montana were shipped between 1967 and 1991. At least three of these locations were processing facilities that have been associated with high levels of exposure and the vermiculite was used not only for insulation, but also for

wall board, agricultural, and other purposes. A report is being prepared for submission to the Ministries of Labour and Environment as well as the WSIB.

Another project worth highlighting that focuses on specific carcinogens, is a study of nurses and pharmacy workers and their exposure to antineoplastic agents. The goal of this study is to evaluate exposure-reduction strategies and assess the feasibility of a future epidemiologic study.

At this stage, intervention research is the least developed area of OCRC's research agenda. Although we do have a project to conduct systematic reviews of the effectiveness of workplace interventions to reduce the incidence of cancer, we have yet to initiate traditional intervention studies. We are currently in discussions with the Ontario Division of the Canadian Cancer Society on developing a program in support of Ontario's Toxic Use Reduction legislation. This program would involve the hiring of additional staff for intervention studies and developing collaborations with academically-based occupational hygiene laboratories in the province.

3.1 Evaluation of the research program

Milestones in research are identified by a number of benchmarks: projects, published peer-reviewed journal articles, research grants submitted and received, and conference and stakeholder presentations. As a new research centre, the major focus of OCRC has been to launch research projects in line with its three major themes. In this short time period, the Centre has initiated 24 projects. The Centre's current projects by research theme, by name, objective, the OCRC researchers and collaborators on the project, benchmark accomplishments, term, and the external research funder and grant amount if applicable are found in Appendices 5-7. Research Grants are listed in Appendix 8. Peer-reviewed articles, and non-peer-reviewed publications, that have been published by members of the research team are listed in Appendix 9. Conference abstracts are listed in Appendix 10 and other presentations in Appendix 11.

3.2 Research funding

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3.3 Future challenges for the research program

Other than the challenges of recruiting experienced staff (described in Section 2), the major challenge faced by the OCRC relates to funding. Because of the recession we are in a more difficult period for research funding in general, and some of the workers' compensation boards (such as WorkSafeBC) have been moving away from open competitions. Funding for occupational cancer research has always been challenging. A report by the Canadian Cancer Research Alliance found that between 2005 and 2007 the total amount of competitive research dollars from the major 37 Canadian cancer research funding agencies awarded for occupational cancer research was only 1.3 million dollars. It is important to point out the period covered by the report misses the subsequent direct funding of CAREX Canada by the Canadian Partnership Against Cancer (CPAC) and the funding of OCRC by the CCS-Ontario Division, CCO, and the Workplace Safety and Insurance Board (WSIB). The report also does not include funding from the workers' compensation boards of Canada, which in recent years have been the major source of funding for all research on occupational disease.

The WSIB in Ontario has been the national leader in occupational health research funding and the OCRC and other Centres of Research Excellence have benefited from this. If constraints are placed on future WSIB open competition funding the Centre may face serious challenges when expanding the scope of its research unless alternate sources of funding are identified.

4. Capacity Building

OCRC takes the scarcity of researchers in the field of occupational cancer very seriously. We attempt to recruit as many students as possible to become part of the Centre. These include practicum students (3-6 month placements), thesis students, and student research assistants. OCRC has now had 11 students (see Appendix 4 for a list of Students and their projects). The major source of students at this time is the Dalla Lana School of Public Health at the University of Toronto, and the Centre has built a positive reputation and always has a wide selection of students to choose from when we put out a call for summer or winter practicums. Students are selected based upon a range of skills and expertise tied to the needs of present or forthcoming research grants. When they come to OCRC, they are encouraged to take advantage of all the learning activities that are taking place at the Centre, are mentored on a day-to-day basis by Paul Demers, Anne Harris (OCRC's post-doctoral fellow) and the other scientists, encouraged to prepare manuscripts for publication and abstracts for conference presentations, and are encouraged to consider occupational cancer as a potential career path.

Capacity building efforts are focused on our staff as well as our trainees. Most of OCRC's Research Associates were hired for their skills, methodological expertise and interest in occupational cancer, rather than their in-depth knowledge of the content area. To help fill this gap and provide learning opportunities for the trainees, the Centre has weekly staff meetings to discuss on-going projects and potential collaborations. They often include a presentation by the Director on relevant subjects such as the history, use of, and health effects of different workplace carcinogens; the impact of shiftwork; and the IARC classification system. The Research Associates and students give presentations on their research projects and organize a monthly journal club where an article of interest is read and discussed. They also attend symposiums, workshops, conferences, and presentations on occupational cancer. The research associates and students are also encouraged to give presentations, be involved in symposia, or deliver posters on their research at scientific meetings, such as the Canadian Association for Research on Work and Health (CARWH) meeting that was held in Vancouver in May 2012.

OCRC provides a supportive, flexible environment for staff continuing their education. In March of this year two Research Associates completed their PhDs. Ann Del Bianco will stay at OCRC as a Senior Research Associate and continue to mentor other staff and students. Victoria Arrandale has accepted a post-doctoral position at the University of Alberta, but will continue to collaborate on OCRC projects as an Affiliated Scientist. In a related development, Anne Harris, OCRC's post-doctoral fellow, has accepted a faculty position at Ryerson University's School of Occupational and Public Health. Although she will be sorely missed on a day-to-day basis, she will now become our newest Scientist and focus much of her research program on occupational cancer.

Another major capacity building area of the OCRC is the creation of research platforms. These include the Cross Canada Study of Pesticides and Health and the 1991 Census Linkage databases and, eventually, the burden of occupational cancer project. Each of these projects provides opportunities for many trainees and staff to carve out small and medium sized projects that meet their interests and help the Centre to conduct research addressing the wide interests of our stakeholder community. Our hope in the future is that the Ontario Health Study (OHS) may provide similar fertile ground, but as of this time the focus of the OHS has been on recruitment and no occupational information has been collected. We are participating in the environmental and occupational committee of the OHS in order to contribute to its next phase of development.

5. Collaborations with Workplaces, Stakeholders and other Funders

The model that OCRC is developing is that of a strong inner core, with collaborative links reaching out to other researchers, other research institutions, policy makers, advocates, physicians, workplaces, and other stakeholders and funders. The OCRC has a very strong set of collaborations with other researchers in Ontario, across Canada, and internationally. Evidence for this can be clearly seen in the collaborators who are listed for each of the Centre's projects in Appendixes 5-7 and in the co-authors of our publications and presentations.

The OCRC has a very strong relationship with CCS. The Centre participates in the Ontario Division of the CCS's Environmental and Occupational Stakeholders Group. The Centre's Director has been a member of several committees for the CCS, most recently CCSRI's End 1 (prevention) Development Committee and has also delivered talks to audiences for CCS's fundraising events. The relationship with the Canadian Cancer Society (CCS), especially its Ontario division, was strengthened during the writing of a collaborative team grant, which was submitted in March to the CCS's Research Institute.

The relationship with the WSIB-RAC has always been strong, and the RAC secretariat has been very helpful in negotiating contracts, reporting requirements, and in its support for research initiatives. As the Research Advisory Council moves over to the Ministry of Labour, new relationships need to be built and this will be a priority in 2012 and 2013. Paul Demers and Desre Kramer are members of the Occupational and Environmental Health Interest Group, organized by Dr. Leon Genesove, which includes the Ministry of Labour physicians, CRE-OD and IWH, and we are attempting to strengthen our ties with other areas of the Ministry.

From the beginning, the Centre has engaged with the wider stakeholder audience in various ways: asking for their input on research priorities (a survey with 177 respondents at start-up); asking for input on the priority of shiftwork for stakeholders (a survey with 517 respondents in 2011); creating a forum for exchange of research findings (Research Day in 2009 and 2011); holding two conferences on major issues of interest (the shiftwork symposia in 2010 and upcoming in 2012); engaging in training (the classification of carcinogens workshop in 2012); giving presentations to stakeholder audiences (Partners in Prevention, Workplace Safety North); and holding face-to-face meetings on specific issues (with organized labour and industry representatives). This is also coupled with creating posters, plain-language summaries, brochures and newsletter articles; having a dynamic website; and hiring a knowledge transfer and exchange expert (Desre Kramer).

6. Knowledge Transfer and Exchange

Knowledge Transfer and Exchange (KTE) is the facilitated dissemination of evidence-based knowledge to targeted audiences. Milestones in KTE can be measured by the number of messages or products that are generated from mature research that are targeted to stakeholder audiences, and their impact. OCRC is still in the beginning stage of this latter benchmark, but recently, with the focus of the associate director, the Centre is developing a strong KTE strategic initiative.

The OCRC KTE strategy is four fold: (1) the creation and dissemination of multiple communication products containing research-based messages; (2) the involvement of stakeholders on research projects as partners (an integrated knowledge transfer strategy); (3)

the engagement of knowledge brokers to directly connect and build relationships with key decision-makers (an intensive knowledge transfer strategy); and (4) tracking the impact of the KTE initiative through a knowledge transfer evaluation framework.

6.1 Creation and dissemination of multiple communication products

OCRC is synthesizing the findings of research projects, and is generating evidence-based messages about causation; vulnerable worker populations, occupations, and industries; and the prevention of occupational cancer. The Centre is creating multiple products to communicate our research findings to stakeholder audiences. These include one-page summaries, presentations, posters, articles for newspapers, factsheets, newsletter articles, handouts, and plain-language reports.

The website is the major vehicle that is engaged to profile the syntheses of OCRC's research findings. As new research comes to fruition, new evidence is highlighted. Each of the Centre's projects can now be found summarized on the website. Presentations and posters are created on research projects for academic and stakeholder conferences, symposiums and meetings. Stakeholder conferences that OCRC has had a significant presence include Partners in Prevention and Workplace Safety North.

OCRC also communicates with the media to bring our research findings to a broader audience. For example, a recent series of articles produced by CBC on occupational cancer profiled and quoted OCRC researchers. These articles can be found on the OCRC website.

OCRC has participated in the *Ontario Cancer Fact* series three times, and plans to do a fourth later in 2012. These *Cancer Facts* are highly regarded and appear on CCO's website (and the OCRC website). Articles about the Centre's research have been published in the Institute for Work & Health's (IWH) newsletter. We are also producing reports and reviews that have a potential impact on policy-level decision-making. These include the *Accepted Workplace Fatality Claims* report and the *Occupational Exposure Limits* report. The latter report was presented to the Ministry of Labour in the spring of 2012.

As well, the Centre has now held a number of public forums to increase awareness and knowledge of occupational cancer causes, prevention and interventions. OCRC held one symposium on shiftwork in 2010, and plans to hold a second in 2012. The first symposium reviewed the evidence on the carcinogenicity of shiftwork, and the second will examine intervention research to identify effective methods to reduce the impact and health effects of shiftwork. We have held two full-day events (in 2009 and 2011) that highlight our research to our broad stakeholder community. These Research Days have become a regular feature in our annual calendar. The Centre also recently held an educational workshop in the spring of 2012 on how the International Agency for Research on Cancer (IARC) classifies carcinogens. These events have been well attended (with the audience made up of physicians, clinicians, hygienists, labour representatives and industry representatives), and the feedback received from follow-up evaluations is that the events are interesting and informative.

6.2 Integrated Knowledge Transfer

OCRC has a strong commitment to collaborative research. When a research project lends itself to the process, the Centre engages in an integrated KTE strategy that involves bringing the users-of-research into the research process as research partners. This helps with ensuring the relevance of the research to users, increases the knowledge of the users, enhances the credibility of the Centre, and facilitating the uptake of all the Centre's research.

OCRC has multiple projects that include the collaboration of researchers across Ontario, Canada, and internationally; this is a major and significant strength of the Centre. However, including stakeholders as research partners is a more recent initiative that is now receiving increasing emphasis. A recent cross-Canada team-grant research proposal led by Paul Demers, and submitted to the CCSRI, has built into its structure the rich and full engagement of CCS into the research process and communications.

6.3 Intensive Knowledge Transfer

OCRC has multiple stakeholder groups who are invested in the findings of the Centre's research: industry, organized labour, workers, clinicians, physicians, and policy decision-makers. They each need evidence-based knowledge focused on their needs and their decision-making process. OCRC is very aware that policy-makers in particular can have the most significant impact on the reduction of present workplace exposures. A future initiative will be to engage a knowledge broker to interact specifically with policy decision-makers.

6.4 Knowledge Transfer and Exchange Method of Evaluation (KEME)

The evaluation framework that will be used to evaluate the impact of the KT strategy at OCRC is called the KEME. This framework has recently been accepted for publication with Desre Kramer as the lead author. It uses a combination of three well-regarded KT theories. Individual research studies will begin to utilize this framework to guide its evaluation (as demonstrated in the CCSRI grant proposal), as will the Centre's KT strategy overall.

7. Impact

Assessing the impact of a Centre that is as new as OCRC is a challenge. Though the OCRC was formed in 2009, initial growth was slow and it was not until the fall of 2010 that it had a full-time permanent Director. Despite its youth, however, the OCRC has made some strong first steps in becoming recognized as a leader in the field of occupational cancer research and is helping to raise awareness of occupational cancer research. As a very basic measure, our website now receives over 500 visits per month.

This increased awareness of the expertise of the OCRC has resulted in new national and international collaborations on research projects, and increased citations of journal articles published by OCRC scientists. Some examples of such collaborations include the team grant application that was submitted to CCSRI that looks at the human and economic burden of occupational cancer, the collaborative project with CCO, Health Canada and members of the National Uranium Miners Working Group, and the collaborative project with the Nordic Occupational Cancer Group and the Finnish Institute for Occupational Cancer. This outreach to researchers with multidisciplinary expertise, in different research centres, in diverse jurisdictions, is the beginning of a network that the Centre plans to expand significantly in the future.

Another way to measure scientific impact is through the increasing number of requests that Paul Demers, as Director of the OCRC, receives to talk on occupational cancer. These requests demonstrate a growth in the importance of occupational cancer research, an increased awareness and heightened profile of the Centre, and the recognition of the expertise of the OCRC in this field. These speaking requests have come from diverse groups. They include international and national research conferences where Paul has given keynote talks, led symposiums, and given presentations on OCRC's research. They also include talks to stakeholder groups such as the Canadian Cancer Society, First Nations groups, organized labour meetings, and Ontario's health and safety associations (see Appendix 11 for a full list of presentations given by Paul and the other OCRC scientists).

The presence and the credibility of OCRC also creates a niche for all workers to access research that is relevant to them. Two stakeholder-driven research projects that are in the developmental stage demonstrate that this is in fact working and responds to a need. The Centre is responding to a request by healthcare workers to assess their exposure to anti-neoplastic agents at an Ontario cancer clinic. They want an organization that has the expertise to track their risk and the credibility to make an objective third-party assessment. The Centre has also been approached by the Occupational Health Clinics for Ontario Workers (OHCOW) to expand upon a project to reach out to physicians to do work histories on patients, and by the Communication, Energy and Paperworkers Union (CEP) to further explore the use of work-history booklets for workers. These initiatives will be part of a future study that will evaluate the impact of high awareness of occupational exposure and cancer and changes in behavior amongst workers and companies in Sarnia.

Some specific projects also demonstrate that OCRC research has had some impact. A project that is examining the link between asbestos exposure, respiratory cancer, and the filing of workers' compensation, conducted in partnership with Dr. Linn Holness at CRE-OD, is an example of this. The study is looking at effective approaches for sick workers suffering from mesothelioma and asbestos-related lung cancer to have their occupational histories recorded, and, where appropriate, provide assistance for the filing of workers' compensation claims. Follow-up interviews with participants have revealed insights into the initial impact of the study. The following quotation from the husband of a participant who had her occupational history

recorded demonstrates a heightened awareness regarding expert occupational health resources:

"I guess we knew nothing about OHCOW [the Occupational Health Clinics for Ontario Workers] until this study. We were unaware of how we would go about doing any of this. The nurse at [OHCOW] helped us fill out the questionnaire. Otherwise, we didn't even know that in the clinic there were things going on for workers."

Additional participants in the study have expressed the intention to file compensation claims, while others are still considering taking such action. There are plans to scale-up this project to multiple lung cancer clinics in Ontario.

Having a measurable impact on stakeholder awareness and knowledge of occupational cancer will take a few more years, and we modestly report what we have managed to accomplish in the two years that the OCRC Director has been in place. Nevertheless, OCRC has developed an integrated approach that is bringing together excellence in research, extensive collaborations with researchers and stakeholder, framed by a KTE strategy, and this is bound to have a strong impact as the Centre matures.

8. Management and Administration of the Centre

The internal management structure of the OCRC is described in Section 2 (The Research Team). The four founding organizations (WSIB-RAC, CCO, CCS and the United Steelworkers) made the decision to house the Centre within CCO, and not a university, to ensure that the Centre would have the potential for creating collaborations across multiple universities and institutions and for other pragmatic reasons. CCO offers the Centre very strong and well-developed infrastructure for human resource, finance, procurement, and IT support. Having these centralized services gives the Centre ongoing expertise and assistance, and provides savings on support resources.

The original vision for OCRC was of a semi-autonomous unit benefitting from CCO's infrastructure, but otherwise quite independent. Initially, we worked very closely with the CCO's Surveillance Unit collaborating on small surveillance projects and publications, but were otherwise little connected to CCO as a whole. In the past few years OCRC has moved towards developing much stronger relationships within CCO. Paul Demers, Desre Kramer, and the research associates at OCRC have joined a number of committees within CCO, with the result that OCRC is becoming known within this large organization, especially with the other units that are part of Prevention and Cancer Control (PCC) division. OCRC is also moving towards becoming an integral part of the prevention portfolio as it develops within PCC. To this end, we have worked hard on CCO's Strategic Plan to ensure that the Centre's and CCO's goals are well aligned. As a result of our better integration within CCO we have the strong support of Linda Rabeneck, PCC's Vice President, and the other PCC Directors. As a concrete sign of support, OCRC was recently moved to a large new space within CCO that not only consolidates the scattered staff but also provides ample room for growth over the next two years.

However, being based within CCO is not without its challenges. The Centre's researchers often feel constrained by the bureaucracy of CCO, which is itself trying to respond to the accountability requirements of the Ministry of Health. All travel, even to Hamilton, needs to be pre-authorized by officials ranging from our VP and Chief Financial Officer (for Ontario travel outside the GTA) to the Minister of Health and Long-Term Care (for international travel outside

the US). Recently one of our students had to withdraw from attending an international conference because after four months she still did not have travel approval. Finance also puts restrictions on how we can spend money and HR puts strict limits on the salary we can offer Research Associates. Our interactions within the departments of human resources, finance and procurement are developing in a positive direction, but the rules are, if anything, becoming stricter. On the positive side, in contrast to many universities, the CCO staff has been extremely responsive and helpful, and has done their best to help us navigate the sometimes difficult policies and procedures.

9. Strengths and Weakness

OCRC's strengths and weaknesses have been detailed in the appropriate sections of the report and will only be described briefly here.

Strengths

- Very strong support from CCS
- A very supportive environment within CCO
- Ongoing support and encouragement from the WSIB-RAC
- Strong support from organized labour and advocacy organizations
- A national leader in occupational cancer surveillance
- An excellent core of scientists
- A strong set of Ontario, national, and international collaborators
- A young and extremely enthusiastic, interdisciplinary staff
- A good track record of attracting trainees
- A strong, broad research program in etiologic research, surveillance, and prevention with early sign of strong productivity
- Recognition by the broad stakeholder community as a centre for expertise on occupational cancer
- International recognition

Weaknesses

- Difficulty recruiting staff with experience in occupational cancer and inability to offer long-term employment
- Uncertainty regarding future relationship with the WSIB and Ministry of Labour
- Need for further development of prevention research
- Bureaucratic barriers to spending and hiring

10. Lessons Learned

In general, the successes of the OCRC during its first three years are a good indication that the decisions made when creating the Centre were wise. In particular, the decision to locate within CCO, the tri-institutional support, and the strong governance structure and strategic plan created a very stable, and hopefully sustainable, base for the Centre.

There are, however, a few lessons learned. We have learned that the base of the Centre will be much stronger as an integrated unit within CCO, rather than a semi-autonomous one. On the other hand it would be useful for the Centre to have at least a small part of its base within the University of Toronto, or perhaps another academic institution, and to have some grants or other funding held there to provide flexibility in spending money and to support student travel.

OCRC was created with strong stakeholder support. Both organized labour and employers are represented on our steering committee, have attended our events, and participated in our stakeholder surveys. In addition, OCRC and its Director have received many requests to speak by unions and employer health and safety associations. On the other hand, being recognized as a source of information is not enough and we recognize that further efforts will be needed to engage with our stakeholders in order to promote effective prevention efforts.

Overall, the strategic plan, developed while the Centre was in its first year, has work well. However, it could use a detailed review. For example, there is a serious need for traditional intervention studies, but there are many other types of prevention studies that could contribute to exposure reduction strategies and inform decision making, which would more closely respond to the needs of our stakeholders. For example, in order to be responsive to stakeholders, we have found ourselves involved in prevention research that does not fit directly into the strategic plan, and leads us to conclude that maybe the 3rd research focus area in the strategic plan, “intervention research to develop and evaluate prevention and exposure reduction strategies and inform policy decision-making,” may need to be revised or a new focus on prevention research added.

Appendix 1: Scientists

Name	Affiliations	OCRC-related Activities
Dr. Paul Demers	<ul style="list-style-type: none"> · Director, OCRC · Scientific Director, CAREX Canada · Professor, Dalla Lana School of Public Health, University of Toronto · Clinical Professor, School of Population and Public Health, University of British Columbia 	Principal investigator or engaged at some level in all projects listed in Appendices 5-7
Dr. Desre Kramer	<ul style="list-style-type: none"> · Associate Director, OCRC · Adjunct Professor, University of Waterloo, · Adjunct Professor, Ryerson University · Adjunct Researcher, Institute for Work & Health 	<ul style="list-style-type: none"> · Making the link between exposure and respiratory cancer in the clinical setting: What are the steps? · Assessing exposure to antineoplastic drugs in Ontario healthcare workers · Assessment of the human and economic costs of occupational cancer · Review of compensated workplace fatality trends and patterns · Awareness to behavior · Development of an Ontario workplace exposure database · Interventions mitigating health risks among shift workers: Current knowledge and workplace practices
Dr. Shelley Harris	<ul style="list-style-type: none"> · Associate Professor, Dalla Lana School of Public Health, University of Toronto · Scientist, Cancer Care Ontario 	<ul style="list-style-type: none"> · Cross-Canada Study of Pesticides · Occupational exposure to diesel and gasoline engine emissions and the incidence of colorectal and bladder cancer in Canadian men · Exposures to emerging environmental contaminants and risk of breast cancer in young women: a case-control study using biomarkers of exposure · Ontario uranium miner cohort: Linkage with national mortality and cancer incidence files · Occupational exposure to silica and the risk of lung cancer in Canadian men
Dr. Loraine Marrett	<ul style="list-style-type: none"> · Senior Scientist and Director, Surveillance Unit, Cancer Care Ontario · Professor, Dalla Lana School of Public Health, University of Toronto 	<ul style="list-style-type: none"> · Health risks among nuclear workers in Ontario who have been exposed to internal sources of ionizing radiation: A feasibility study · Ontario uranium miner cohort: Linkage with national mortality and cancer incidence files · Development of an occupational cancer surveillance program for Ontario · Mesothelioma patterns and projections in Ontario and Canada · Making the link between exposure and respiratory cancer in the clinical setting: What are the steps? · Cancer in Ontario Risk Factors Report
Dr. John McLaughlin	<ul style="list-style-type: none"> · Senior Investigator, Samuel Lunenfeld Research Institute, Mount Sinai Hospital · Professor, Dalla Lana School of Public Health, University of Toronto · Founding Director, Ontario Health Study 	<ul style="list-style-type: none"> · Cross-Canada Study of Pesticides · Toronto Lung Cancer Case-Control Study · Health risks among nuclear workers in Ontario who have been exposed to internal sources of ionizing radiation: A feasibility study · Ontario uranium miner cohort: Linkage with national mortality and cancer incidence files · Assessing exposure to antineoplastic drugs in Ontario healthcare workers
Dr. Minh Do	<ul style="list-style-type: none"> · Epidemiologist, Public Health Agency of Canada · Research Fellow, R. Samuel McLaughlin Centre for Population Health Risk Assessment, University of Ottawa 	<ul style="list-style-type: none"> · Health risks among nuclear workers in Ontario who have been exposed to internal sources of ionizing radiation: A feasibility study · Ontario uranium miner cohort: Linkage with national mortality and cancer incidence files

Appendix 2: Affiliated Scientists

Name	Affiliation	OCRC-related Activities
Dr. Victoria Arrandale	· Post-Doctoral Fellow, University of Alberta	<ul style="list-style-type: none"> Analyses of the Ontario MoL exposure database (MESU) Tracking occupational diseases: an analysis of approaches for the Canadian context Sinonasal cancer surveillance and exposure to sinonasal carcinogens in Ontario
Dr. Anne Harris	· Assistant Professor, Ryerson University (beginning in November)	<ul style="list-style-type: none"> Occupational cancer surveillance using the 1991-2006 Canadian census mortality & cancer cohort Development of an Occupational Cancer surveillance Program for Ontario Sinonasal cancer surveillance and exposure to sinonasal carcinogens in Ontario
Dr. Aaron Blair	<ul style="list-style-type: none"> Scientist Emeritus and former Chief, Occupational and Environmental Epidemiology Branch of the Division of Cancer Epidemiology and Genetics, National Cancer Institute Interim Director, OCRC, 2009-2010 	<ul style="list-style-type: none"> Cross-Canada Study of Pesticides Women and minorities and other trends in occupational cancer research: An update Systematic review of interventions for the prevention of occupational cancer Member of OCRC's Scientific Advisory Committee
Dr. Paul Villeneuve	<ul style="list-style-type: none"> Senior Research Scientist, Environmental Health Science and Research Bureau, Health Canada Assistant Professor, Dalla Lana School of Public Health, University of Toronto 	<ul style="list-style-type: none"> Occupational exposure to diesel and gasoline engine emissions and the incidence of colorectal and bladder cancer in Canadian men Exposures to emerging environmental contaminants and risk of breast cancer in young women: a case-control study using biomarkers of exposure Ontario uranium miner cohort: Linkage with national mortality and cancer incidence files Occupational exposure to silica and the risk of lung cancer in Canadian men
Dr. Kristan Aronson	· Professor, Department of Community Health and Epidemiology and in the School of Environmental Studies, Queen's University	<ul style="list-style-type: none"> Interventions mitigating health risks among shift workers: Current knowledge and workplace practices Member of OCRC's Scientific Advisory Committee
Dr. Jack Siemiatycki	<ul style="list-style-type: none"> Professor, Epidemiology, University of Montreal Canada Research Chair and the Guzzo-SRC Chair in Environment and Cancer 	<ul style="list-style-type: none"> IARC Carcinogen Classification Workshop Toronto Lung Cancer Case-Control Study Member of OCRC's Scientific Advisory Committee

Appendix 3: Research Associates

Name	Education	Projects
Dr. Anna Koné (Senior Research Associate)	MSc (Community Health), University of Montreal (2002) PhD (Public Health, Epidemiology), University of Montreal (2008)	<ul style="list-style-type: none"> Occupational cancer surveillance using the 1991-2006 Canadian census mortality & cancer cohort Development of an Occupational Cancer surveillance Program for Ontario
Linda Kachuri	MPH (Epidemiology), University of Toronto (2012)	<ul style="list-style-type: none"> Cross-Canada Study of Pesticides – exposure to multiple pesticides and the risk of multiple myeloma Linkage of 1991 Census (20% sample) with tumour registry data – Cancer in agricultural workers and others potentially exposed to pesticides Exposures to emerging environmental contaminants and risk of breast cancer in young women: a case-control study using biomarkers of exposure Occupational exposure to diesel and gasoline engine emissions and the incidence of colorectal and bladder cancer in Canadian men Occupational exposure to silica and the risk of lung cancer in Canadian men
Garthika Navaranjan	MPH (Epidemiology), University of Toronto (2012)	<ul style="list-style-type: none"> Cross-Canada Study of Pesticides – exposure to multiple pesticides and the risk of Hodgkin lymphoma Analyses of the Ontario MoL exposure database (MESU) – exposure to tetrachloroethylene in Ontario, 1981-1996 Cancer in Ontario: Risk Factors – a set of focused modules Occupational cancer surveillance using the 1991-2006 Canadian census mortality & cancer cohort
Alison McKenzie (part-time)	MSc (Occupational and Environmental Hygiene), University of British Columbia (2012)	<ul style="list-style-type: none"> Online cancer risk assessment tool
Dr. Ann Del Bianco (Senior Research Associate)	MES (Environmental Causes of Esophageal Cancer), York University (2003) PhD (Environmental Studies), York University (2012)	<ul style="list-style-type: none"> Assessing exposure to antineoplastic drugs in Ontario healthcare workers Assessment of the human and economic costs of occupational cancer Review of Compensated Workplace Fatality Trends and Patterns Educational Offerings in Occupational Health & Safety: A Survey of Canadian Schools Cancer in Ontario Risk Factors Report Making the link between exposure and respiratory cancer in the clinical setting: What are the steps? Awareness to behavior Ministry of Labour Asbestos Registry
Kate Jardine	MSc (Chemistry), University of Toronto (2010)	<ul style="list-style-type: none"> Toronto Lung Cancer Case-Control Study Analyses of the Ontario MoL exposure database (MESU) – exposure to nickel in Ontario, 1981-1996 Creation of a database of Canadian studies that have measured exposure to workplace carcinogens Libby Sister Sites in Ontario Investigation Women and minorities and other trends in occupational cancer research: An update Development of an Ontario workplace exposure database
Kris Moore	MA (Political Science), York University (2010)	<ul style="list-style-type: none"> Making the link between exposure and respiratory cancer in the clinical setting: What are the steps? Assessing exposure to antineoplastic drugs in Ontario healthcare workers Awareness to behavior Development of an Ontario workplace exposure database
Manisha Pahwa	MPH (Occupational and Environmental Health), University of Toronto (2011)	<ul style="list-style-type: none"> Cross-Canada Study of Pesticides Assessment of the human and economic costs of occupational cancer A comparison of Ontario Occupational Exposure Limits for Carcinogens to other jurisdictions in Canada and elsewhere Interventions mitigating health risks among shift workers: Current knowledge and workplace practices Occupational cancer surveillance using the 1991-2006 Canadian census mortality & cancer cohort Ministry of Labour Asbestos Registry

Continued – Appendix 3		
Priyanka Raj	MPH (Occupational and Environmental Health), University of Toronto (2010)	<ul style="list-style-type: none"> · Creation of a database of Canadian studies that have measured exposure to workplace carcinogens · Assessing exposure to antineoplastic drugs in Ontario healthcare workers · Libby Sister Sites in Ontario Investigation · Women and minorities and other trends in occupational cancer research: An update · Assessment of the human and economic costs of occupational cancer · Development of an Ontario workplace exposure database
Karin Hohenadel (part-time)	MSc (Health Studies and Bioethics), University of Toronto (2007)	<ul style="list-style-type: none"> · Cross-Canada Study of Pesticides · Women and minorities and other trends in occupational cancer research: An update · Systematic review of interventions for the prevention of occupational cancer

Appendix 4: Students and Trainees Supervised

Student Name	Program Type	Date	Principal Supervisor	Project
Renata Musa	MPH Practicum, Occupational and Environmental Health, Dalla Lana School of Public Health (DLSPH), U of T	Sept 2012-present	Shelley Harris	· Male breast cancer/EMF project
Joanne Kim	MPH Masters Project, Occupational and Environmental Health, DLSPH, U of T	July 2011-present	Paul Demers	· Analyses of the Ontario MoL exposure database (MESU) and assessment of the human and economic costs of occupational cancer related to diesel engine exhaust
Caryn Thompson	MPH Practicum, Epidemiology, DLSPH, U of T	2011-present	Shelley Harris	· Exposures to emerging environmental contaminants and risk of breast cancer in young women: a case-control study using biomarkers of exposure · Male breast cancer project/EMF project
Linda Kachuri	MPH Practicum, Epidemiology, DLSPH, U of T	Jan-Aug 2012	Paul Demers	· Cross-Canada Study of Pesticides – exposure to multiple pesticides and the risk of multiple myeloma · Linkage of 1991 Census (20% sample) with tumour registry data – Cancer in agricultural workers and others potentially exposed to pesticides
Marcella Jones	MPH Practicum, Epidemiology, DLSPH, U of T	May-Aug 2012	Paul Demers	· Linkage of 1991 Census (20% sample) with tumour registry data – Whole body vibration and prostate cancer
Trevor van Ingen	MPH Practicum, Epidemiology, DLSPH, U of T	May-Aug 2012	Paul Demers	· Linkage of 1991 Census (20% sample) with tumour registry data – Cancer in electrical utility workers
Jill Hardt	MPH Practicum, Epidemiology, DLSPH, U of T	May 2011-Aug 2012	Paul Demers	· Toronto Lung Cancer Case-Control Study · Linkage of 1991 Census (20% sample) with tumour registry data – lung cancer in welders
Garthika Navaranjan	MPH Practicum, Epidemiology, DLSPH, U of T	May 2011-Aug 2012	Paul Demers	· Cross-Canada Study of Pesticides – exposure to multiple pesticides and the risk of Hodgkin lymphoma · Analyses of the Ontario MoL exposure database (MESU) – exposure to tetrachloroethylene in Ontario, 1981-1996
Desiree Latour	MPH Practicum, Epidemiology, DLSPH, University of Toronto	Jan-May 2012	Paul Demers	· Toronto Lung Cancer Case-Control Study – occupations and the risk of lung cancer
Lua Eriksson	MPH Practicum, Community Medicine, DLSPH, U of T	April-Sept 2011	Paul Demers	· Linkage of 1991 Census (20% sample) with tumour registry data – occupations and ovarian cancer
Dr. Patricia Lui (completed PhD in May 2011)	Ph.D. Program, Institute for the History and Philosophy of Science & Technology, U of T	Jan-May 2011	Paul Demers	· History of Occupational Cancer Research in Ontario
Manisha Pahwa	MPH Masters Project, Occupational and Environmental Health, DLSPH, U of T	2009-2011	Shelley Harris	· Cross-Canada Study of Pesticides – pesticide exposure, immunologic conditions, and the risk of non-Hodgkin lymphoma

Appendix 5: Identification of Causes of Cancer in the Workplace

Project	Broad Objectives	OCRC Team and Collaborators	Funder, Budget and Timeline	Accomplishments/Plans Thus Far
Occupational exposure to silica and the risk of lung cancer in Canadian men	To use the National Enhanced Cancer Surveillance System data to examine the risk of lung cancer associated with occupational exposure to crystalline silica	<i>Staff:</i> Linda Kachuri <i>Scientists:</i> Shelley Harris (PI), Paul Villeneuve <i>Collaborators:</i> Kenneth Johnson (Public Health Agency of Canada), Marie-Elise Parent (Institut national de la recherche scientifique, Quebec)	2012-2013	<ul style="list-style-type: none"> · Data have been transferred from PHAC to OCRC · Data analysis plan has been prepared and statistical analysis has commenced
Male breast cancer/EMF project	To use the National Enhanced Cancer Surveillance System data to study male breast cancer and electromagnetic fields	<i>Students:</i> Renata Musa, Caryn Thompson <i>Scientists:</i> Shelley Harris, Paul Villeneuve, Paul Demers	Core funding	<ul style="list-style-type: none"> · Data set has been transferred from PHAC to OCRC
Cross-Canada Study of Pesticides <ul style="list-style-type: none"> · The effects of multiple pesticides in combination on cancer risk · The potential for immunologic conditions and family history to act as effect modifiers for pesticides and cancer risk · Pooled analyses with similar studies from US National Cancer Institute 	To examine the risk of non-Hodgkin lymphoma, Hodgkin lymphoma, multiple myeloma, and soft tissue sarcoma associated with exposure to specific pesticides and combinations of pesticides	<i>Staff:</i> Manisha Pahwa, Garthika Navaranjan, Linda Kachuri <i>Scientists:</i> Shelley Harris (PI), Paul Demers, John McLaughlin, Aaron Blair <i>Collaborators:</i> John Spinelli (BC Cancer Agency), Punam Pahwa & James Dosman (University of Sask.), Nichole Garzia (UBC), Karin Hohenadel (PHO), Laura Beane-Freeman (US NCI)	Core funding Multiple projects with ongoing analyses Beginning pooled analyses with US NCI	<ul style="list-style-type: none"> · NHL multiple pesticides paper published in 2011 and presented at the North American Congress of Epidemiology · NHL, pesticides, & immunologic conditions paper by Manisha Pahwa published in 2012 · HL pesticides paper by Garthika Navaranjan submitted for publication · MM pesticides analysis manuscript by Linda Kachuri submitted for publication · Pooled analyses with US studies in progress · Symposium held at CARWH 2012 meeting
Toronto Lung Cancer Case-Control Study <ul style="list-style-type: none"> · Analyses of a lung cancer case-control dataset with information on occupational risk factors and smoking history · Contribution of the Toronto data to the international SYNERGY pooled lung cancer case-control study coordinated by IARC 	Examine associations within the Toronto dataset SYNERGY: create a massive dataset to: <ul style="list-style-type: none"> · examine dose-response relationships · synergistic effects of multiple carcinogens and smoking · examine associations with suspected carcinogens · Possible analysis of pooled SYNERGY data by OCRC researchers 	<i>Staff:</i> Kate Jardine <i>Students:</i> Jill Hardt, Desiree Latour <i>Scientists:</i> John McLaughlin (co-PI), Paul Demers (co-PI) <i>Collaborators:</i> Kurt Straif (International Agency for Research on Cancer), Hans Kromhout & Roel Vermeulen (Utrecht University)	Toronto Analyses: Core funding Ongoing analyses Possible future analyses of the SYNERGY pooled data	<ul style="list-style-type: none"> · Analyses of the Toronto data by Desiree Latour and Jill Hardt in progress · Poster by Jill Hardt presented at X2012 meeting · Collaborate with international investigators on pooled analyses

Continued – Appendix 5				
Exposures to emerging environmental contaminants and risk of breast cancer in young women: a case-control study using biomarkers of exposure	To examine the association between occupational exposure and the risk breast cancer among women aged 18-39	<i>Staff:</i> Linda Kachuri <i>Scientists:</i> Shelley Harris (PI), Paul Villeneuve <i>Collaborators:</i> Michelle Cotterchio, Gil Valencia (CCO), Len Ritter (University of Guelph), Julia Knight (U of T)	CCSRI \$846,000 2011-2014	<ul style="list-style-type: none"> · Shelley Harris is leading this study from CCO's Research Unit · Ethics have been approved · Online questionnaires have been developed and biological sampling, analysis, and storage protocols are in place · Case control recruitment will begin fall of 2012
Health risks among nuclear workers in Ontario who have been exposed to internal sources of ionizing radiation: A feasibility study	To assess the feasibility of an epidemiological study of nuclear workers in Ontario who have been exposed to ionizing radiation from internal emitters	<i>Staff:</i> Minh Do (Co-PI) <i>Scientists:</i> Loraine Marrett (Co-PI), John McLaughlin, Paul Demers <i>Collaborators:</i> Elisabeth Cardis (CREAL, Barcelona)	WSIB RAC \$29,000 Complete in 2012	<ul style="list-style-type: none"> · Feasibility study nearing completion
Ontario uranium miner cohort: Linkage with national mortality and cancer incidence files Creation of a pooled dataset of all 3 Canadian uranium miners studies	To continue to assess the risk of cancer, as well as cardiovascular disease among Ontario uranium miners	<i>Staff:</i> Minh Do <i>Scientists:</i> Loraine Marrett (PI), Paul Demers, John McLaughlin, Shelley Harris, Paul Villeneuve <i>Collaborators:</i> Members of the National Uranium Miners Working Group	Linkage funded by Canadian Nuclear Safety Commission Contract in negotiation for analysis (~\$150,000) 2012-2014	<ul style="list-style-type: none"> · Finalize agreement for external funding · Linkage completed at Statistics Canada · Conduct analyses
Occupational exposure to diesel and gasoline engine emissions and the incidence of colorectal and bladder cancer in Canadian men	To use the National Enhanced Cancer Surveillance System Data to examine the risk of cancer associated with sites other than the lung	<i>Staff:</i> Linda Kachuri <i>Scientists:</i> Shelley Harris (PI), Paul Villeneuve <i>Collaborators:</i> Kenneth Johnson (Public Health Agency of Canada), Marie-Elise Parent (Institut national de la recherche scientifique (INRS), Quebec)	WSIB RAC \$161,000 2011-2013	<ul style="list-style-type: none"> · Shelley Harris is leading this study from CCO's Research Unit · Data transfer from PHAC to INRS complete · INRS is coding occupational exposures and statistical analysis will begin in Nov/Dec 2012

Appendix 6: Surveillance of Occupational Cancer and Carcinogens

Project	Broad Objectives	OCRC Team and Collaborators	Funder, Budget and Timeline	Accomplishments/Plans Thus Far
Development of an Ontario workplace exposure database	To find sources of occupational exposure data in Ontario and create a database so that the data can be analyzed for surveillance and prevention purposes	<i>Staff:</i> Kate Jardine, Priyanka Raj, Kris Moore <i>Scientists:</i> Paul Demers (PI), Desre Kramer <i>Collaborators:</i> Leon Genesove	Application submitted to WSIB RAC Bridging the Gap for \$59,000 for mining exposures 2013	· Feasibility study of collection of mining exposure data in the planning stages
Ministry of Labour Asbestos Registry	To examine patterns and trends of worker exposure to asbestos	<i>Staff:</i> Ann Del Bianco, Manisha Pahwa <i>Students:</i> Jill Hardt <i>Scientists:</i> Paul Demers	Core funding 2012-2013	· In the process of cleaning the database and requesting better quality data from the MOL
Tracking occupational diseases: an analysis of approaches for the Canadian Context	A review of existing exposed workers registries in Canada, the US, and Europe to determine their utility for surveillance and identify optimal practices	<i>Scientists:</i> Victoria Arrandale, Paul Demers <i>Collaborators:</i> Stephen Bornstein, Barbara Nies (MUN), Chris McLeod, Mieke Koehoorn (UBC)	\$49,000 from Worksafe BC with WCB of Nova Scotia and Alberta Human Services. Funds held at MUN. 2012-2013	· Initial scan completed and review underway
Occupational cancer surveillance using the 1991-2006 Canadian census mortality & cancer cohort Initial areas of interest include: · Lung cancer in welders · Occupations & ovarian cancer · Cancer in wood workers · Cancer in firefighters & police · Shiftwork & cancer · Cancer in agricultural workers · Occupational physical activity and colorectal cancer	To create a platform that would allow the study of new and existing questions on occupational cancer	<i>Staff:</i> Manisha Pahwa, Garthika Navaranjan, Linda Kachuri, Anna Koné <i>Students:</i> Jill Hardt, Lua Eiriksson, Marcella Jones, Trevor van Ingen <i>Scientists:</i> Paul Demers, Anne Harris <i>Collaborators:</i> Michael Tjepkema, Paul Peters (StatsCan), CAREX Canada, Nordic Occupational Cancer Group, Finnish Institute for Occupational Health, Rick Burnett (Health Canada)	Initially core funded Currently funded by the WSIB-RAC \$312,000 2012-2015	· Initial round of feasibility work/pilot analyses completed · Paper on welders in preparation · Paper on ovarian cancer in preparation · Presentations to US NCI and NOCCA group · Results on firefighters presented at CARWH · Presented on the data linkage at NAACCR · Abstract on ovarian cancer submitted to Society of Gynecologic Oncology meeting · Analysis of occupational physical activity and colorectal cancer in progress · Analyses of shiftwork levels using SLID · Analyses by exposure using MESU & CAREX being explored · Waiting for extended follow-up of cohort
Development of an Occupational Cancer surveillance Program for Ontario	To create a new occupational surveillance platform based only on Ontario data	<i>Staff:</i> Anna Koné <i>Scientists:</i> Paul Demers, Loraine Marrett, Anne Harris	Funded by WSIB RAC \$29,800 2012-2013	· Ethics completed · Data access permissions granted · Awaiting data for linkage
Cancer Among Nordic Firefighters	To collaborate with the NOCCA Study Group on a topic of mutual interest	<i>Scientists:</i> Paul Demers <i>Collaborators:</i> Nordic Occupational Cancer Group, Finnish Institute for Occupational Health	Core funded Complete in 2012	· Results from NOCCA study for firefighters supplied by Norwegian Tumour Registry · Results presented at EPICOH · Manuscript in preparation

Continued – Appendix 6

Mesothelioma patterns and projections in Ontario and Canada	To predict future trends in mesothelioma in Ontario and the rest of Canada	<p><i>Scientists:</i> Loraine Marrett (Co-PI), Paul Demers</p> <p><i>Collaborators:</i> Mark Clements (Co-PI) (Australian National University)</p>	<p>Core funding</p> <p>Complete in 2012</p>	<ul style="list-style-type: none"> · Manuscript in preparation
Analyses of the Ontario MoL exposure database (MESU)	<p>To examine historical patterns of exposure to carcinogens in Ontario</p> <p>To use this data in collaboration with CAREX to create exposure matrixes that can be used for cancer surveillance and research</p>	<p><i>Staff:</i> Kate Jardine, Garthika Navaranjan</p> <p><i>Students:</i> Joanne Kim</p> <p><i>Scientists:</i> Paul Demers (PI), Victoria Arrandale</p> <p><i>Collaborators:</i> Cheryl Peters (CAREX Canada)</p>	<p>CAREX Canada and core funding</p> <p>Ongoing analyses</p>	<ul style="list-style-type: none"> · Analyses using MESU dataset in progress · Reports on exposure to carcinogens in Ontario (1981-1996) in progress: wood dust and school teachers; tetrachloroethylene; nickel · Creation of exposure matrixes for use with 1991 Census and Burden projects in progress
Sinonasal cancer surveillance and exposure to sinonasal carcinogens in Ontario	To examine the descriptive epidemiology of sino-nasal cancer in relation to trends in exposure in Ontario	<p><i>Scientists:</i> Paul Demers (PI), Victoria Arrandale, Anne Harris</p> <p><i>Collaborators:</i> Chris McLeod, Mieke Koehoorn, Cheryl Peters (University of British Columbia)</p>	<p>Core funding</p> <p>Completed in 2011</p>	<ul style="list-style-type: none"> · Project completed - analysis of tumour registry data complete and Cancer Fact released · Analysis of MESU exposure data complete · Comparison with parallel project in BC completed · Presented at CCRA research conference

Appendix 7: Intervention, Prevention, Systematic Reviews, and Other Projects

Project	Broad Objectives	OCRC Team and Collaborators	Funder, Budget and Timeline	Accomplishments/plans thus far for 2011-2012
Cancer in Ontario Risk Factors Report	To provide a summary of the epidemiologic evidence linking risk factors to common cancers To provide a series of reports examining the prevalence of risk factors in Ontario	<i>Staff:</i> Garthika Navaranjan, Ann Del Bianco <i>Students:</i> Joanne Kim <i>Scientists:</i> Paul Demers, Loraine Marrett <i>Collaborators:</i> Elisa Candido, Beth Theis (CCO Surveillance Unit)	Core funding Complete in 2013	· OCRC is examining the occupational and environmental risk factors · Report to be released January 2013 · Abstract for poster presentation to be submitted for the Ontario Public Health Convention
Interventions mitigating health risks among shift workers: Current knowledge and workplace practices	To evaluate the current state of scientific knowledge and workplace practices about interventions to prevent illness and injury related to shift work through a stakeholder survey, systematic review, and symposium	<i>Staff:</i> Manisha Pahwa <i>Scientists:</i> Paul Demers (PI), Kristan Aronson (Co-I), Desre Kramer <i>Collaborators:</i> Cam Mustard (IWH, Co-I), Ron Saunders (IWH), Carolyn Gotay (UBC), Sarah Neil (UBC)	WSIB Bridging the Gap #10115 Complete December 2012	· Report on stakeholder survey of 500 respondents completed, published on web · Systematic literature review of interventions in progress · Symposium on November 6 in Toronto · Oral presentation at Forum North in November
Awareness to behavior	To determine what policies and practices to reduce workers' exposure to toxins are economically feasible and effective, and what are the barriers to change	<i>Staff:</i> Kris Moore, Ann Del Bianco <i>Scientists:</i> Desre Kramer (Co-PI) <i>Collaborators:</i> Linn Holness (Co-PI), Irena Kudla (St. Michael's Hospital)	Application sent to WSIB RAC Bridging the Gap for \$60,000 2013	· Awaiting decision of WSIB RAC
Educational offerings in occupational health & safety: a survey of Canadian schools	A review of graduate and undergraduate programs across Canada to identify strengths and gaps in academic training	<i>Staff:</i> Ann Del Bianco <i>Scientists:</i> Paul Demers <i>Collaborators:</i> Vernon Curran, Stephen Bornstein (MUN), Karen Bartlett, Hugh Davies (UBC)	\$49,000 from Worksafe BC with WCB of NS and Alberta Human Services. Funds held at MUN. 2012-2013	· Initial scan completed and review underway
Development of regional priorities for occupational cancer in Ontario	To determine priorities for interventions to prevent occupational cancer at a regional level in Ontario	<i>Staff:</i> Alison McKenzie <i>Scientists:</i> Paul Demers <i>Collaborators:</i> Perry Hystad (CAREX Canada)	CCO Prevention funding Total \$70,000 for fiscal year 2012/13 for several projects	· Search for funding opportunities underway · Initial plan developed to compare regional-level industry employment levels to carcinogen output based on the National Pollutant Release Inventory
Development of cancer prevention and risk factor indicators	Explore the development of cancer prevention and risk factor indicators under the CSQI framework	<i>Staff:</i> Alison McKenzie <i>Scientists:</i> Paul Demers <i>Collaborators:</i> Perry Hystad (CAREX Canada)	Anticipated approximately \$90,000 for fiscal year 2013/14)	· Initial meeting held · Perry Hystad to visit OCRC in November and attend a meeting of the Commission on Environmental Cooperation on health indicators and vulnerable communities
Online cancer risk assessment tool	To create the occupational module of an online tool for assessing cancer risk	<i>Staff:</i> Alison McKenzie <i>Scientists:</i> Paul Demers <i>Collaborators:</i> Anne-Marie Nicol		· OCRC is adding an occupational portion to the online risk assessment tool being developed by CCO · Prototype development underway

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Assessment of the human and economic costs of occupational cancer	To raise awareness of the human and economic impacts of exposure to occupational carcinogens	<i>Staff:</i> Ann Del Bianco, Manisha Pahwa, Priyanka Raj <i>Students:</i> Joanne Kim <i>Scientists:</i> Paul Demers (PI), Desre Kramer (co-PI) <i>Collaborators:</i> Hugh Davies, Anne-Marie Nicol, Cheryl Peters (UBC), Emile Tompa (IWH), Doug Hyatt (Rotman School, UT), Sarah Bouma (CCS), France Labreche (IRSST), Jerome Lavoue (UM), Patrick Curley (AHS), Lesley Rushton (Imperial College, London)	Initially core funded Team Grant Application to CCSRI for \$1,000,000 2012-2016	<ul style="list-style-type: none"> · Hosted meeting in Toronto with investigators of similar projects in Alberta, Quebec, UK, United States · Preliminary work underway while awaiting decision from CCSRI (decision due in October)
Women and minorities and other trends in occupational cancer research: An update	To examine major trends in occupational epidemiology research To develop a database of Canadian studies for the Burden project and other uses	<i>Staff:</i> Priyanka Raj, Kate Jardine <i>Scientists:</i> Aaron Blair (PI), Paul Demers <i>Collaborators:</i> Sheila Hoar Zahm (U.S. National Cancer Institute), Karin Hohenadel (PHO)	Core funding Complete in 2012	<ul style="list-style-type: none"> · Manuscript on trends in occupational cancer research in preparation · Manuscript on the inclusion of women in occupational cancer research in preparation
Creation of a database of Canadian studies that have measured exposure to workplace carcinogens	To contribute to CAREX to help fill in gaps in our knowledge of exposure in Canada To develop a database of Canadian studies for the Burden project and other uses	<i>Staff:</i> Priyanka Raj, Kate Jardine <i>Scientist:</i> Paul Demers <i>Collaborators:</i> Calvin Ge, Cheryl Peters (CAREX Canada)	Core funding Complete in 2012	<ul style="list-style-type: none"> · Database finalized except for French language publications · Poster presented at CARWH
History of occupational cancer research in Ontario and Canada	To raise awareness about the role of Ontario in the history of occupational cancer research	<i>Students:</i> Patricia Liu <i>Scientists:</i> Paul Demers	Core funding Completed in 2011/12	<ul style="list-style-type: none"> · Final draft in preparation
Libby Sister Sites in Ontario Investigation	To identify sites where asbestos-contaminated vermiculite was shipped in Ontario	<i>Staff:</i> Priyanka Raj, Kate Jardine <i>Scientist:</i> Paul Demers <i>Collaborators:</i> Cheryl Peters, Alejandro Cervantes (CAREX Canada)	Core funding Complete in 2012	<ul style="list-style-type: none"> · Database acquired from US EPA sent by CAREX Canada · Identification of sites underway · Report in preparation
A comparison of Ontario Occupational Exposure Limits for Carcinogens to other jurisdictions in Canada and elsewhere	To raise awareness regarding occupational exposure limits in Ontario To prepare a submission to the MoL's annual OEL Update Project	<i>Staff:</i> Manisha Pahwa <i>Scientist:</i> Paul Demers <i>Collaborators:</i> Cheryl Peters, Calvin Ge (CAREX Canada)	Core funding Completed in 2012	<ul style="list-style-type: none"> · Recommendations submitted to MoL · Final report completed

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Review of Compensated Workplace Fatality Trends and Patterns	Update of the 2006 “5 Deaths a Day Report” focusing on compensated cancer and occupational disease in Ontario and Canada	<i>Staff:</i> Ann Del Bianco <i>Scientists:</i> Paul Demers, Desre Kramer	Core funded Complete in 2012	<ul style="list-style-type: none"> · Cancer Fact completed · Brochure prepared for Day of Mourning · Report completed · Results presented at CARWH · Poster presented at Partners in Prevention · Results to be presented at Forum North · Manuscript in preparation
Making the link between exposure and respiratory cancer in the clinical setting: What are the steps?	Pilot study to identify optimal methods of occupational history taking and referral for workers’ compensation Extension of initial pilot study to multiple centres across Ontario	<i>Staff:</i> Kris Moore, Ann Del Bianco <i>Scientists:</i> Desre Kramer, Loraine Marrett (Co-PI) <i>Collaborators:</i> Linn Holness (Co-PI), Irena Kulda (St. Michael’s Hospital), John Oudyk (OHCOW)	WISB RAC \$30,000 (Pilot) Pilot study complete in 2011/12 Extension to centres across Ontario planned	<ul style="list-style-type: none"> · Pilot study completed in 2012 · Results of Juravinski pilot study presented at CARWH 2012 · Report submitted to WSIB · Manuscript in preparation · Preliminary plans for broader provincial roll-out of project underway
Assessing exposure to antineoplastic drugs in Ontario healthcare workers: A pilot study at the Juravinski Cancer Centre	To study exposure to anti-neoplastic agents and feasibility of long-term surveillance of exposed healthcare workers	<i>Staff:</i> Kris Moore, Priyanka Raj, Ann Del Bianco <i>Scientists:</i> Paul Demers, Desre Kramer, John McLaughlin (Lunenfeld)	Initial funding by Juravinski for pilot work and questionnaire \$50,000 (tentative) 2012/13	<ul style="list-style-type: none"> · Pilot study includes questionnaire with history of exposure and multiple interviews · Ethics application submitted to Hamilton Health Sciences · Presentation made to Juravinski staff and management
Systematic review of interventions for the prevention of occupational cancer	To identify whether the impact of interventions on cancer rates can be documented using epidemiologic studies	<i>Scientists:</i> Aaron Blair (PI), Paul Demers <i>Collaborators:</i> Karin Hohenadel (PHO), Kurt Straif (IARC)	Core funding Complete asbestos in 2012	<ul style="list-style-type: none"> · Presented at EPICOH in Oxford · Manuscript for asbestos in preparation

Appendix 8: Grants

Table 1: Grants housed at OCRC

Research Project	Funder	Principal Investigator(s)	Co-Investigators(s)	Budget	Timeline
Occupational Cancer Surveillance using the 1991-2006 Canadian Census Mortality & Cancer cohort	WSIB	<u>Demers PA</u>	<u>Harris A</u>	\$312,570	2012-2015
Surveillance of occupational cancer through linkage of WSIB data to Ontario Cancer Registry	WSIB	<u>Demers PA</u>	<u>Harris A</u> , Koehoorn M, McLeod C	\$29,800	2012-2013
Exposures to emerging environmental contaminants and risk of breast cancer in young women: a case-control study using biomarkers of exposure	Canadian Cancer Society Research Institute	<u>Harris SA</u>	Cotterchio M, Knight J, Ritter L, <u>Villeneuve P</u>	\$846,000	2011-2014
Health risks among nuclear workers in Ontario who have been exposed to internal sources of ionizing radiation: A feasibility study	WSIB RAC	<u>Marrett LD</u> , <u>Do M</u>	<u>McLaughlin J</u> , Cardis E	\$29,000	2011-2012
Interventions mediating health risks among shift workers: Current knowledge and workplace practices	WSIB RAC	<u>Demers PA</u>	Mustard C, <u>Aronson K</u>	\$52,250	2011-2012
Making the link between exposure and respiratory cancer in the clinical setting: What are the steps?	WSIB RAC	<u>Marrett LD</u> , <u>Holness L</u>	<u>Hohenadel K</u> , Kudula I, Oudyk J	\$30,000	2011-2012
Classification of Carcinogens (Knowledge Translation Grant)	Canadian Institutes for Health Research	<u>Demers PA</u>	<u>Siemiatycki J</u> , Ritter L	\$19,000	2011
Occupational exposure to diesel and gasoline engine emissions and the incidence of colorectal and bladder cancer in Canadian men	WSIB RAC	<u>Harris SA</u>	<u>Villeneuve P</u> , Johnson K, Parent M	\$160,880	2010-2013

Table 2: Grants pending

Research Project	Funder	Principal Investigator(s)	Co-Investigators(s)	Budget	Timeline
The Risk of Cancer Amongst Canadian Miners	Canadian Cancer Society private funding	<u>Demers PA</u>	<u>Kramer D</u>	Pending	Pending
Striking a Balance: Perceptions of Quality of Life in Employment, Health, and Personal Roles among women with breast cancer	Canadian Cancer Society Research Institute	Gignac M, <u>Del Bianco A</u>	<u>Kramer D</u>	\$200,000	Pending (2013-2015)
From awareness to behavior: exploring the impact of heightened awareness of workplace carcinogens in Sarnia	WSIB RAC	<u>Kramer D</u> , Holness L	<u>Del Bianco A</u> , Kudla I, <u>Moore K</u>	\$60,000	Pending (2013)
Development of an Ontario mining exposure database	WSIB RAC	<u>Demers PA</u>	Genesove L, <u>Kramer D</u>	\$59,900	Pending (2013)
Pooled analyses of pesticides, agricultural exposures and select cancers: Developing research priorities and disseminating knowledge with stakeholders	Canadian Institutes of Health Research	<u>Harris SA</u>	<u>Pahwa M</u> , Beane-Freeman L, <u>Kramer D</u> , <u>Demers PA</u> , <u>Blair A</u>	\$25,000	Pending (2013)
The Human and Economic Burden of Occupational Cancer in Canada	Canadian Cancer Society Research Institute	<u>Demers PA</u>	Davies H, Tompa E, <u>Kramer D</u> , Nicol AM, Lavoué J, Labreche F, Curly P, Rushton L, Hyatt D, McLeod C, Bouma S	\$1,000,000	Pending (2012-2015)
Ontario uranium miner cohort: Linkage with national mortality and cancer incidence files	Canadian Nuclear Safety Commission	<u>McLaughlin JR</u>	<u>Do M</u> , <u>Harris SA</u> , <u>Marrett LD</u> , Members of the National Uranium Miners Working Group	\$150,000 (contract in negotiation)	2012-2014

Table 3: Grants housed outside of OCRC

Research Project	Funder	Principal Investigator(s)	Co-Investigators(s)	Budget	Timeline
Educational offerings in occupational health & safety: a survey of Canadian schools	Worksafe BC with WCB of Nova Scotia and Alberta Human Services	Curran V (Memorial University of Newfoundland)	Bartlett K (UBC), Bornstein S (Memorial), Davies H (UBC), <u>Demers PA</u> , and others	\$49,381	2012-2013
Tracking occupational diseases: an analysis of approaches for the Canadian context	Worksafe BC with WCB of Nova Scotia and Alberta Human Services	Bornstein S (Memorial University of Newfoundland)	<u>Demers PA</u> , Koehoorn M (UBC), McLeod C (UBC), Oudyk J (OHCOW), and others	\$49,321	2012-2013
CAREX Canada	Canadian Partnership Against Cancer	Davies H (UBC), Nicol AM (CAREX Canada)	<u>Demers PA</u>	\$600,000	2012 -2017
Sun safety behaviors among construction workers: An initiative for skin cancer prevention	Canadian Dermatology Foundation	Koehoorn M (UBC)	Peters C (UBC, CAREX Canada), <u>Demers PA</u> , Nicol AM (CAREX Canada), <u>Marrett LD</u>	\$30,000	2012-2013
Advanced spatial analyses to characterize environmental impacts on cancer risk: Phase 1	Cancer Research Society, Quebec	<u>McLaughlin JR</u>	<u>Harris SA</u> , Holowaty E (Dalla Lana School of Public Health)	\$120,000	2011-2013
Capacity Development for a Canadian Workplace Exposure Database	Workers Compensation Board of Manitoba	Davies H (UBC)	<u>Demers PA</u> , Nicol A (CAREX Canada)	\$88,466	2011-2013
Translating environmental health surveillance data for cancer prevention & policy development	Canadian Institutes for Health Research	Nicol AM (CAREX Canada)	<u>Demers PA</u> , Davies H (UBC)	\$98,980	2011-2012
Seeking compensation for mesothelioma	Worksafe BC	Koehoorn M (UBC)	McLeod C (UBC), Lee C (BCCA), <u>Demers PA</u>	\$50,000	2011-2012
Educational Offerings in Occupational Health & Safety: A Survey of Canadian Schools	Worksafe BC with WCB of NS & AB Human Services	Curran V (Memorial University)	Bartlett K (UBC), Bornstein S (MUN), Davies H (UBC), <u>Demers PA</u> , & Others	\$49,381	2011-2012
Tracking occupational diseases: an analysis of approaches for the Canadian context	Worksafe BC with WCB of NS & AB Human Services	Bornstein S (Memorial University)	<u>Demers PA</u> , Koehoorn M (UBC), McLeod C (UBC), Oudyk J (OHCOW), & others	\$49,321	2011-2012
Capacity Development for a Canadian Workplace Exposure Database	Worksafe BC	Davies H (UBC)	<u>Demers PA</u> , Nicol AM (CAREX Canada)	\$140,327	2010-2012
Capacity Development for a Canadian Workplace Exposure Database	Saskatchewan Workers' Compensation Board	Davies H (UBC)	<u>Demers PA</u> , Nicol AM (CAREX Canada)	\$65,421	2010-2012

Appendix 9: Publications

Table 1: Peer-Reviewed Publications

Citation	PubMed ID	Open Access	Journal Impact Factor*
Hon C-Y, Teschke K, Chu W, <u>Demers PA</u> , Venners S. Antineoplastic drug contamination of surfaces throughout the hospital medication system in Canadian hospitals. <i>Journal of Occupational and Environmental Hygiene</i> (manuscript submitted October 2012).	N/A	N/A	1.293
Kachuri L, <u>Demers PA</u> , Blair A, Pahwa M, Spinelli JJ, Pahwa P, <u>McLaughlin JR</u> , Dosman JA, Harris SA. Exposures to multiple pesticides and the risk of multiple myeloma in Canadian men. <i>International Journal of Cancer</i> (manuscript submitted October 2012).	N/A	N/A	4.926
Villeneuve PJ, Parent ME, Harris SA, Johnson KC. Occupational exposure to asbestos and lung cancer in men: evidence from a population-based case-control study in eight Canadian provinces. <i>Annals of Occupational Hygiene</i> (manuscript submitted September 2012).	N/A	N/A	2.014
<u>Hardt J</u> , Vermeulen R, Peters S, Kromhout H, <u>McLaughlin JR</u> , <u>Demers PA</u> . A comparison of exposure assessment approaches: Lung cancer and occupational asbestos exposure in a population-based case-control study. <i>American Journal of Epidemiology</i> (manuscript submitted September 2012).	N/A	N/A	5.745
Setton E, Hystad P, Poplawski K, Cheasley R, Cervantes A, Keller CP, <u>Demers PA</u> . Risk-based indicators of Canadian's exposures to environmental carcinogens. <i>Environmental Research</i> (manuscript submitted September 2012).	N/A	N/A	3.5
Kosny A, Lifshen M, Pugliese D, Majesky G, <u>Kramer D</u> , Steenstra I, Soklaridis S, Carrasco C. Buddies in Bad Times? The role of co-workers after a work-related injury. <i>Journal of Occupational Rehabilitation</i> (manuscript submitted September 2012)	N/A	N/A	2.795
Labrèche F, Duguay P, Ostiguy C, Boucher A, Roberge B, Peters CE, <u>Demers PA</u> . Estimating occupational exposure to carcinogens in Quebec: a multi-tiered approach. <i>Preventative Medicine</i> (manuscript submitted August 2012).	N/A	N/A	3.773
<u>Navaranjan G</u> , Hohenadel K, Blair A, <u>Demers PA</u> , Spinelli JJ, Pahwa P, <u>McLaughlin JR</u> , Dosman JA, Ritter L, Harris SA. Exposures to multiple pesticides and the risk of Hodgkin lymphoma in Canadian men. <i>Occupational and Environmental Medicine</i> (manuscript submitted June 2012)	N/A	N/A	3.494
<u>Harris SA</u> , Boucher BA, Cotterchio M. Will women diagnosed with breast cancer provide biological samples for research purposes? <i>Cancer Epidemiology</i> (manuscript submitted March 2012).	N/A	N/A	1.182
Hon C-Y, Teschke K, Chu W, <u>Demers PA</u> , Astrakianakis G. Identification of determinants of antineoplastic drug contamination of work surfaces throughout the hospital medication system. <i>Annals of Occupational Hygiene</i> (manuscript submitted October 2011).	N/A	N/A	2.014
Peters CE, Nicol AM, <u>Demers PA</u> . Prevalence of exposure to solar radiation (UVR) on the job in Canada. <i>Canadian Journal of Public Health</i> (manuscript accepted March 2012).	N/A	N/A	N/A
<u>Kramer DM</u> , Wells RP, Carlan N, Aversa T, Bigelow P, Dixon S, McMillan K. Did you have an impact? A theory-based method for planning and evaluation knowledge-transfer and exchange activities in occupational health & safety. <i>International Journal of Occupational Safety and Ergonomics</i> (in press).	N/A	N/A	N/A
Pahwa M, Harris SA, Hohenadel K, <u>McLaughlin JR</u> , Spinelli JJ, Pahwa P, Dosman JA, Blair A. Pesticide use, immunologic conditions, and risk of non-Hodgkin lymphoma in Canadian men in six provinces. <i>International Journal of Cancer</i> 2012;131(11):2650-2659.	22396152	No	4.926
Hohenadel K, Harris SA, <u>McLaughlin JR</u> , Spinelli JJ, Pahwa P, Dosman JA, <u>Demers PA</u> , Blair A. Exposure to multiple pesticides and risk of non-Hodgkin lymphoma in men from six Canadian provinces. <i>International Journal on Environmental Research and Public Health</i> 2011;8(6):2320-2330.	21776232	Yes	N/A
Blair A, Marrett LD, Beane-Freeman L. Occupational cancer in developed countries. <i>Environmental Health</i> 2011;10(Suppl 1):S9.	21489219	Yes	N/A
Hohenadel K, Pichora E, Marrett L, Bukvic D, Brown J, Harris SA, <u>Demers PA</u> , Blair AE. Priority issues in occupational cancer research: Ontario stakeholder perspectives. <i>Chronic Diseases and Injuries in Canada</i> 2011;31(4):147-151.	21978637	Yes	N/A
Leon ME, Beane Freeman L, Douwes J, Hoppin J, Kromhout H, Lebailly P, Nordby KC, Schenker M, Schüz J, Waring S, Alavanja M, Annesi-Maessano A, Baldi I, Dalvie A, Ferro G, Fervers B, Langseth H, London L, Lynch C, <u>McLaughlin J</u> , Merchant J, Pahwa P, Sigsgaard T, Stayner L, Wesseling C, Yoo K, Zahm S, Straif K, Blair A. AGRICOH: A Consortium of Agricultural Cohorts. <i>International Journal of Environmental Research and Public Health</i> 2011;8(5):1341-1357.	21655123	Yes	N/A

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Continued – Appendix 9 Table 1			
Pahwa P, Karunanayake CP, Dosman JA, Spinelli JJ, <u>McLaughlin JR</u> , Cross-Canada Group. Soft-tissue sarcoma and pesticides exposure in men: Results of a Canadian case-control study. <i>Journal of Occupational and Environmental Medicine</i> 2011;53(11):1279-1286.	22068131	No	1.98
Ghosh S, <u>McLaughlin JR</u> , Spinelli JJ, Dosman JA, McDuffie HH, Pahwa P. Multiple Myeloma and Occupational Exposures: A Population-Based Case-Control Study. <i>Journal of Occupational and Environmental Medicine</i> 2011;53(6):641-646.	21654434	No	1.98
Camargo MC, Stayner LT, Straif K, Reina M, Al-Alem U, <u>Demers PA</u> , Landrigan PJ. Occupational exposure to asbestos and ovarian cancer: A meta-analysis. <i>Environmental Health Perspectives</i> 2011;119(9):1211-1217.	21642044	Yes	6.087
Gorman Ng M, Stjernberg E, Koehoorn M, <u>Demers PA</u> , Davies HW. Exposure to pesticides and metal contaminants of fertilizer among tree planters. <i>Annals of Occupational Hygiene</i> 2011;55(7):752-763.	21673126	No	2.014
Wong I, <u>Demers PA</u> , McLeod C. Shiftwork trends and risk of work injury among Canadian workers. <i>Scandinavian Journal of Work, Environment and Health</i> 2011;37(1):54-61.	20890587	Yes	N/A
Boffetta P, Colditz GA, Potter JD, Kolonel L, Robson PJ, Malekzadeh R, Seminara D, Goode EL, Yoo Y, <u>Demers P</u> , Gallagher R, Prentice R, Yasui Y, O'Doherty K, Petersen GM, Ulrich CM, Csizmadia I, Amankwah EK, Brockton NT, Kopciuk K, McGregor SE, Kelemen LE. Cohorts and consortia conference: A summary report (Banff, Canada, June 17-19, 2009). <i>Cancer Causes and Control</i> 2011;22(3):463-468.	21203821	Yes	N/A
Kirkham T, Koehoorn MW, McLeod CB, <u>Demers PA</u> . Surveillance of mesothelioma and workers' compensation in British Columbia, Canada. <i>Occupational and Environmental Medicine</i> 2011;68(1):30-35.	20876555	No	3.494
Harris SA, Villeneuve PJ, Crawley CD, Mays JE, Yearly RA, Hurto KA, Meeker JD. National study of exposure to pesticides among professional applicators: an investigation based on urinary biomarkers. <i>Journal of Agricultural and Food Chemistry</i> 2010;58(18):10253-10261.	20799690	No	N/A
Brenner DR, Hung RJ, Tsao, M-S, Shepherd FA, Narod S, Rubenstein W, <u>McLaughlin, JR</u> . Lung cancer risk in never-smokers: a population-based case-control study of epidemiologic risk factors. <i>BMC Cancer</i> 2010;10(1):285.	20546590	Yes	3.153
Kroos D, Mays JE, <u>Harris SA</u> . A model to predict 24-h urinary creatinine using repeated measurements in an Occupational cohort study. <i>Journal of Exposure Science and Environmental Epidemiology</i> 2010;20(6):516-525.	19707247	No	3.132
<u>Harris SA</u> , Nicolai LA. Occupational exposures in emergency medical service providers and knowledge of and compliance with universal precautions. <i>American Journal of Infection Control</i> 2010;38(2):86-94.	19815310	No	3.036
Marrett LD, Pichora EC, Costa ML. Work-time sun behaviours among Canadian outdoor workers: Results from the 2006 national sun survey. <i>Canadian Journal of Public Health</i> 2010;101(4):119-122.	21033541	Yes	N/A
<u>Harris SA</u> , Urton A, Turf E, Monti M. Fish and shellfish consumption estimates and perceptions of risk in a cohort of occupational and recreational fishers of the Chesapeake Bay. <i>Environmental Research</i> 2009;109(1):108-115.	18930456	No	3.5
Payne JJ, <u>Pichora E</u> . Filing for workers' compensation among Ontario cases of mesothelioma. <i>Canadian Respiratory Journal</i> 2009;16(5):148-152.	19851532	Yes	1.347
Li P, <u>McLaughlin J</u> , Infante-Rivard C. Maternal occupational exposure to extremely low frequency magnetic fields and the risk of brain cancer in the offspring. <i>Cancer Causes and Control</i> 2009;20(6):945-955.	19224378	Yes	N/A
Karunanayake C, Singh GV, McDuffie HH, Dosman JA, Spinelli JJ, <u>McLaughlin J</u> , Pahwa P. Occupational exposures and Hodgkins lymphoma: Canadian case-control study. <i>Journal of Occupational and Environmental Medicine</i> 2009;51(12):1447-1454.	19952792	No	1.98

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Table 2: Non-Refereed Publications

Title	Authors	Description	Status
Cancer in Ontario: Risk Factors – a set of focused modules	Candido E, Theis B, <u>Navaranjan G</u> , <u>Del Bianco A</u> , <u>Demers PA</u> , <u>Marrett LD</u>	Report	In preparation
Libby Sister Sites in Ontario	<u>Jardine K</u> , <u>Raj P</u> , <u>Demers PA</u>	Report	In preparation
Making the link between exposure and respiratory cancer in the clinical setting: what are the steps? A report on the results of a development grant awarded by the Research Advisory Council of the Ontario Workplace Safety and Insurance Board	<u>Moore K</u> , Kudla I, Oudyk J, <u>Kramer D</u> , Holness L	Report	Report submitted to the WSIB August 2012
OCRC evaluates workplace practices to reduce the health effects of shiftwork	Pahwa M, Kramer D	Article, "News from the CREs" in the IWH <i>At Work</i> Newsletter	Fall 2012
A feasibility study of health risks among nuclear workers in Ontario who have been exposed to internal sources of ionizing radiation	<u>Do M</u> , <u>Demers PA</u>	Report	In preparation
The history of occupational cancer research in Ontario and Canada	<u>Liu P</u> , <u>Demers PA</u>	Report	Final draft in preparation
Occupational Cancer Fatalities on the Rise: The Examination of Accepted Workplace Fatality Claims Within Ontario and Canada	<u>Del Bianco A</u> , <u>Demers PA</u>	Report	September 2012
Occupational cancer is the leading cause of workplace fatalities in Ontario	<u>Del Bianco A</u> , <u>Demers PA</u>	Ontario Cancer Fact	April 2012 (Special Edition)
OCRC says occupational cancer claims are on the rise	<u>Del Bianco A</u> , <u>Demers PA</u>	Article, "News from the CREs" in the IWH <i>At Work</i> Newsletter	Spring 2012
Occupational Exposure Limits for Carcinogens in Ontario Workplaces: Opportunities to Prevent and Control Exposure	<u>Pahwa M</u> , <u>Demers PA</u> , Ge C	Report	Submitted to the Ministry of Labour February 2012
OCRC looks at pesticides and the risk of non-Hodgkin lymphoma	<u>Hohenadel K</u> , <u>Jardine K</u> , <u>Kramer D</u> , <u>Demers PA</u>	Article, "News from the CREs" in the IWH <i>At Work</i> Newsletter	Fall 2011
Sinonasal cancers in Ontario reflect smoking and occupational exposures	<u>Harris MA</u> , <u>Demers PA</u>	Ontario Cancer Fact	May 2011
Shift work in Canadian industries - a probable cancer risk factor	<u>Stegne M</u> , <u>Demers PA</u>	Ontario Cancer Fact	March 2011
OCRC to assess the burden of work-related cancers in Ontario	<u>Silverman C</u> , <u>Hohenadel K</u>	Article, "News from the CREs" in the IWH <i>At Work</i> Newsletter	Spring 2011
Mesothelioma continues to rise steadily in Ontario, but compensation filing is low	<u>Silverman C</u> , <u>Hohenadel K</u>	Article, "News from the CREs" in the IWH <i>At Work</i> Newsletter	Fall 2010
Re-evaluation of the Human Health Effects of Atrazine, Review of Non-Cancer Effects and Drinking Water Monitoring Frequency	FIFRA Scientific Advisory Panel (<u>Harris SA</u> , FQPA Science Review Board Member)	Technical Report. SAP Minutes No. 2010-07. U.S. Environmental Protection Agency (EPA)	2010
Draft Framework and Case Studies on Atrazine, Human Incidents, and the Agricultural Health Study: Incorporation of Epidemiology and Human Incident data into Health Risk Assessment.	FIFRA Scientific Advisory Panel (<u>Harris SA</u> , FQPA Science Review Board Member)	Technical Report. SAP Minutes No. 2010-03. U.S. Environmental Protection Agency (EPA). pp. 168.	2010
Occupational Cancer Research Centre's stakeholder community identifies research priorities	<u>Hohenadel K</u> , <u>Marrett L</u> , <u>Pichora E</u> , <u>Brown J</u> , <u>Harris SA</u> , <u>Blair A</u>	Ontario Cancer Fact	March 2010
Occupational Cancer Research Centre (OCRC) Stakeholder Consultation Report	<u>Hohenadel K</u> , <u>Marrett L</u> , <u>Pichora E</u> , <u>Brown J</u> , <u>Harris SA</u> , <u>Blair A</u>	Report	November 2009
Continued rise in new cases of mesothelioma	<u>Silverman C</u> , <u>Hohenadel K</u>	Ontario Cancer Fact	September 2009

Table 3: Manuscripts in Preparation

Citation
Moore K, Kudla I, Oudyk J, <u>Kramer D</u> , Holness L. Making the link between exposure and respiratory cancer in the clinical setting: what are the steps?
<u>Del Bianco A</u> , <u>Demers PA</u> . The Changing Face of Workplace Fatalities.
Neil S, <u>Pahwa M</u> , <u>Demers PA</u> , Gotay C. A systematic review of health-related interventions in shift workers exposed to light at night.
Ostroumova E, Kesminiene A, Cardis E, <u>Do M</u> , Karotki AV, Baverstock K, Williams D. Health effects of the Chernobyl Nuclear Power Plant accident: 25 years on.
McLeod CB, Koehoorn M, Tamburic T, <u>Demers PA</u> . Evaluation of a physician letter to increase awareness of workers' compensation benefits for individuals with mesothelioma. <i>Canadian Medical Association Journal</i> .
Harris MA, Tjepkema M, Peters PA, <u>Demers PA</u> . Firefighter and police cancer risk surveillance in a national population-based cohort.
Hardt J, Harris MA, Tjepkema M, Peters PA, <u>Demers PA</u> . Welding and lung cancer: a population-based cohort study, Canada, 1991-2003.
<u>Eiriksson L</u> , Harris MA, Tjepkema M, Peters PA, <u>Demers PA</u> . Occupational exposures and ovarian cancer: a national population-based cohort study.
<u>Raj P</u> , Hohenadel K, <u>Stegne M</u> , <u>Blair A</u> , <u>Demers PA</u> . Trends in occupational cancer research.
Hohenadel K, Straif K, <u>Demers PA</u> , <u>Blair A</u> . The effectiveness of asbestos-related interventions in reducing rates of lung cancer and mesothelioma: a review.
Hohenadel K, <u>Raj P</u> , <u>Stegne M</u> , <u>Demers PA</u> , <u>Blair A</u> . The inclusion of women in occupational cancer research.
<u>Demers PA</u> , Martinsen JI, Weiderpass E, Kjaerheim K, Lynge E, Sparén P, Pukkala E. Cancer Incidence among Nordic Firefighters.
Clements M, <u>Demers PA</u> , <u>Marrett L</u> . Mesothelioma patterns and projections in Ontario and Canada.
Van Eerd D, Cole D, Keown K, Irvin E, Kohn MK, <u>Kramer D</u> , Gibson JB, Mahood Q, Slack T, Amick III B, Phipps D, Garcia J, Morassaei S. A systematic review of the quality and types of instruments used to assess KTE implementation and impact.
<u>Do MT</u> . Internal dose reconstruction of plutonium and uranium exposure of nuclear workers recruited for the case-control studies.
<u>Do MT</u> . Nested case-control studies of nuclear workers - Estimates of lung cancer risk associated with internal exposure to uranium and plutonium.
<u>Do MT</u> . Nested case-control studies of nuclear workers - Estimates of leukemia risk associated with internal exposure to uranium and plutonium.
<u>Do MT</u> . Ionizing radiation exposure and risk of gastrointestinal cancers: A study of the Ontario uranium miners.
<u>Do MT</u> . Gamma dose estimation for Ontario Uranium Miners: An ecological approach.

Table 4: Book chapters accepted for publication

Chapter Title	Authors	Book	Status
Asbestos and Canada	Blewett C, Peters CE, Nicol AM, <u>Demers PA</u>	Atlas of Asbestos in the Americas, Pan American Health Organization, Washington, D.C.	In press
Prevention of Occupationally-Induced Cancer	<u>Blair A</u> , Hohenadel K, <u>Demers PA</u> , <u>Marrett L</u> , Straif K	Cancer Prevention and Screening, Anthony B. Miller, Ed. Springer Scientific: New York	In press
Wood Dusts	<u>Demers PA</u> , Weinrich A	Encyclopedia of Toxicology, 3 rd edition. Philip Wexler, Ed. Elsevier: Oxford, 2011	In press

Appendix 10: Conference Abstracts

Abstract	Presenters	Conference	Status
What can be done to prevent the chronic health effects of shiftwork? A systematic review of the evidence	Neil S, <u>Pahwa M</u> , Gotay C, <u>Demers PA</u>	American Industrial Hygiene Conference and Exposition (AIHce). Montreal, Québec, May 18-24, 2013.	Oral presentation, submitted
Workplace fatalities are not what you think! The rise of occupational cancer	<u>Del Bianco A</u> , <u>Demers PA</u>	American Industrial Hygiene Conference and Exposition (AIHce). Montreal, Québec, May 18-24, 2013.	Oral presentation, submitted
The cross-border consequences of an American public health emergency: Exposure of Ontario workers to asbestos-contaminated vermiculite from Libby, Montana	<u>Raj P</u> , <u>Jardine K</u> , Cervantes A, <u>Demers PA</u>	The Ontario Public Health Convention. Toronto, Ontario, April 3-5, 2013.	Oral presentation, submitted
Rethinking important cancer risk factors in Ontario, Part I: A focus on the often forgotten and newly emerging	Candido E, <u>Navaranjan G</u> , <u>Del Bianco A</u> , Theis B, <u>Demers PA</u> , <u>Marrett LD</u>	The Ontario Public Health Convention 2013. Toronto, Ontario, April 3-5, 2013.	Poster presentation, submitted
Rethinking important cancer risk factors in Ontario, Part II: A focus on occupational and environmental exposures	<u>Navaranjan G</u> , <u>Del Bianco A</u> , Candido E, Theis B, <u>Marrett LD</u> , <u>Demers PA</u>	The Ontario Public Health Convention 2013. Toronto, Ontario, April 3-5, 2013.	Poster presentation, submitted
Occupational cancer fatalities: A serious yet often overlooked public health issue	<u>Del Bianco A</u> , <u>Demers PA</u>	The Ontario Public Health Convention 2013. Toronto, Ontario, April 3-5, 2013.	Oral presentation, submitted
Occupational exposures and ovarian cancer: A national population-based cohort study	<u>Eiriksson L</u> , <u>Harris A</u> , Tjepkema M, Peters PA, <u>Demers PA</u>	Society of Gynecologic Oncology 2013 Annual Meeting on Women's Cancer. Los Angeles, California, March 9-12, 2013.	Oral presentation, submitted
Multiple pesticide exposures and the risk of multiple myeloma in Canadian men	<u>Kachuri L</u> , <u>Demers PA</u> , <u>Harris SA</u> , <u>Pahwa M</u> , <u>Blair A</u> , and Cross-Canada Study of Pesticides and Health working group	UICC World Cancer Congress. Montréal, Quebec, August 27-30, 2012.	Oral presentation
Closing Panel Presentation	<u>Demers PA</u>	International Conference on the Science of Exposure Assessment (X2012). Edinburgh, UK, July 2-5, 2012.	Invited panel speaker
Assessing environmental and occupational exposures: CAREX and the Occupational Cancer Research Centre	<u>Demers PA</u>	UICC World Cancer Congress. Montréal, Québec, August 27-30, 2012.	Invited oral presentation
CAREX Canada – Supporting the Prioritization of Primary Prevention Programs	<u>Demers PA</u>	UICC World Cancer Congress. Montréal, Quebec, August 27-30, 2012.	Invited oral presentation
Using exposure data for surveillance and population-based studies (Symposium)	<u>Demers PA</u>	International Conference on the Science of Exposure Assessment (X2012). Edinburgh, UK, July 2-5, 2012.	Invited oral presentation
A comparison of exposure assessment approaches: lung cancer and occupational asbestos exposure in a population-based case control study	<u>Hardt J</u> , <u>Demers PA</u> , Peters S, Kromhout H, Vermeulen R, <u>McLaughlin JR</u>	International Conference on the Science of Exposure Assessment (X2012). Edinburgh, UK, July 2-5, 2012.	Poster presentation
Data Linkages Supporting Occupational Cancer Surveillance	<u>Harris A</u> , <u>Demers PA</u>	North American Association of Central Cancer Registries (NAACCR) Annual Conference. Portland, Oregon, June 5-7, 2012.	Oral presentation
Symposium: Agricultural exposures, lymphatic cancers, and pesticide exposure assessment	Organizers: <u>Pahwa M</u> , <u>Navaranjan G</u> , Garzia M, Nicol AM Co-Chairs: Spinelli JJ, <u>Blair A</u>	Canadian Association for Research on Work and Health (CARWH) Conference. Vancouver, BC, May 31-June 2, 2012.	Symposium

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The effect of immune conditions on pesticide use and the risk of non-Hodgkin lymphoma in Canadian men (in Pesticides Symposium)	<u>Pahwa M, Harris SA, Hohenadel K, McLaughlin JR, Spinelli JJ, Pahwa P, Dosman JA, Blair A</u>	Canadian Association for Research on Work and Health (CARWH) Conference. Vancouver, British Columbia, June 1-2, 2012.	Symposium oral presentation
Exposures to Multiple Pesticides and Combinations of Pesticides and the Risk of Hodgkin Lymphoma in Canadian Men (in Pesticides Symposium)	<u>Navaranjan G, Hohenadel K, Demers PA, Blair A, Spinelli JJ, Pahwa P, McLaughlin JR, Dosman JA, Harris SA</u>	Canadian Association for Research on Work and Health (CARWH) Conference. Vancouver, British Columbia, June 1-2, 2012.	Symposium oral presentation
Symposium: Innovations in Occupational Cancer Surveillance	Organizers: Peters C, <u>Demers PA</u> Chair: <u>Demers PA</u>	Canadian Association for Research on Work and Health (CARWH) Conference. Vancouver, BC, May 31-June 2, 2012.	Symposium
Surveillance of firefighter and police cancer risks in a national population-based cohort (in Surveillance Symposium)	<u>Harris A, Tjepkema M, Peters PA, Demers PA</u>	Canadian Association for Research on Work and Health (CARWH) Conference. Vancouver, British Columbia, June 1-2, 2012.	Symposium oral presentation
Symposium: Work & Health in the Complex World of Construction	Organizer: <u>Kramer D</u> Chair: Wells R	Canadian Association for Research on Work and Health (CARWH) Conference. Vancouver, British Columbia, June 1-2, 2012.	Symposium
A Knowledge-transfer and Exchange Method of Evaluation (KEME) System: a framework to help evaluate occupational health and safety knowledge transfer interventions (in Work & Health in Construction Symposium)	<u>Kramer D, Wells R, Bigelow P, Carlan N, Aversa T</u>	Canadian Association for Research on Work and Health (CARWH) Conference. Vancouver, British Columbia, June 1-2, 2012.	Symposium oral presentation
Making the link between asbestos exposure and respiratory cancer in the clinical setting: What are the steps?	<u>Moore K, Holness L, Kramer D, Oudyk J, Kudla I</u>	Canadian Association for Research on Work and Health (CARWH) Conference. Vancouver, British Columbia, June 1-2, 2012.	Oral presentation
The Changing Face of Workplace Fatalities in Canada	<u>Del Bianco A, Demers PA</u>	Canadian Association for Research on Work and Health (CARWH) Conference. Vancouver, British Columbia, June 1-2, 2012.	Oral presentation
Creation and analysis of a Canadian Exposure Studies Database	<u>Raj P, Jardine K, Ge C, Demers PA</u>	Canadian Association for Research on Work and Health (CARWH) Conference. Vancouver, British Columbia, June 1-2, 2012.	Poster presentation
The Risk of Hodgkin Lymphoma in Canadian Men from Exposure to Multiple Pesticides	<u>Navaranjan G, Hohenadel K, Demers PA, Blair A, Spinelli JJ, Pahwa P, McLaughlin JR, Dosman JA, Harris SA</u>	The Ontario Public Health Convention (TOPHC). Toronto, Ontario, April 2-4, 2012.	Poster presentation
Occupational Cancer Research: Current State of Knowledge and Data Gaps	<u>Demers PA</u>	30 th International Congress on Occupational Health. Cancun, Mexico, March 19, 2012.	Invited plenary presentation
The Causes of Mesothelioma	<u>Demers PA</u>	Canadian Mesothelioma Symposium. Vancouver, British Columbia, January 28, 2012.	Invited oral presentation
Wood Dust Exposure and the Risk of Cancer	<u>Demers PA</u>	Canadian Cancer Research Alliance Conference. Toronto, Ontario, November 27, 2011.	Invited oral presentation
Assessing the Burden of Asbestos-related Lung Cancer: Evidence Synthesis from Case-Control and Cohort Studies	<u>Demers PA, McLeod K, McLeod C</u>	American Public Health Association Annual Meeting. Washington DC, November 2, 2011.	Invited oral presentation
Occupational Cancer in Canada: Current State of Knowledge and Data Gaps	<u>Demers PA</u>	Annual Meeting of the Occupational and Environmental Medical Association of Canada. Niagra-on-the-Lake, October 2011.	Invited oral presentation

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Will women diagnosed with breast cancer provide biological samples for future research purposes?	Harris SA, Boucher B, Cotterchio M	23 rd International Conference of the International Society for Environmental Epidemiology (ISEE). Barcelona, Spain, September 13-16, 2011.	Poster presentation
CAREX Canada: Occupational and Environmental Carcinogen Surveillance	Demers PA, Setton ES, Peters CE, Hystad P, Hall AL, Davies HW, Nicol AM	23 rd International Conference of the International Society for Environmental Epidemiology (ISEE). Barcelona, Spain, September 13-16, 2011.	Poster presentation
Pursuing a Career in Multidisciplinary Research	Demers PA	23 rd International Conference of the International Society for Environmental Epidemiology (ISEE) - Student and New Researcher Workshop. Barcelona, Spain, September 13-16, 2011.	Panel presentation
SkinJEM: A Job Exposure Matrix for Occupational Skin Cancer Risk	Peters CE, Demers PA	23 rd International Conference of the International Society for Environmental Epidemiology (ISEE). Barcelona, Spain, September 13-16, 2011.	Poster presentation
Surveillance of Agricultural Pesticide Use and Potential Environmental Exposure in Canada	Garzia N, Poplawski K, Nicol AM, Demers PA	23 rd International Conference of the International Society for Environmental Epidemiology (ISEE). Barcelona, Spain, September 13-16, 2011.	Poster presentation
Surveillance of Potential Environmental Exposure to Golf Turf Pesticides	Poplawski K, Garzia N, Nicol AM, Demers P	23 rd International Conference of the International Society for Environmental Epidemiology (ISEE). Barcelona, Spain, September 13-16, 2011.	Poster presentation
The role of physicians in increasing workers' compensation benefits for individuals with mesothelioma in British Columbia, Canada	McLeod C, Koehoorn M, Tamburic L, Demers PA	22 nd International Conference on Epidemiology in Occupational Health (EPICOH). Oxford, UK, September 7-9, 2011.	Poster presentation
Historical exposure to wood dust in Ontario, Canada	Peters C, Demers PA, Arrandale V	22 nd International Conference on Epidemiology in Occupational Health (EPICOH). Oxford, UK, September 7-9, 2011.	Poster presentation
Cancer Incidence among Nordic Firefighters	Demers PA, Martinsen JI, Weiderpass E, Kjaerheim K, Lynge E, Sparén P, Pukkala E	22 nd International Conference on Epidemiology in Occupational Health (EPICOH). Oxford, UK, September 7-9, 2011.	Oral presentation
An asbestos exposure database for asbestos mine/mill workers (1976-1994)	Murphy T, Oudyk J, Demers PA, Bornstein S	22 nd International Conference on Epidemiology in Occupational Health (EPICOH). Oxford, UK, September 7-9, 2011.	Oral presentation
Establishment of a national Canadian workplace exposure database: progress and challenges	Hall A, Demers PA, Peters C, Davies H	22 nd International Conference on Epidemiology in Occupational Health (EPICOH). Oxford, UK, September 7-9, 2011.	Oral presentation
The effectiveness of asbestos-related interventions in reducing rates of lung cancer and mesothelioma; a systematic review	Hohenadel K, Straif K, Demers PA, Blair A	22 nd International Conference on Epidemiology in Occupational Health (EPICOH). Oxford, UK, September 7-9, 2011.	Poster presentation
Occupational exposures and lung cancer risk by histologic type in Canada	Hystad P, Demers PA	22 nd International Conference on Epidemiology in Occupational Health (EPICOH). Oxford, UK, September 7-9, 2011.	Poster presentation
Surveillance of occupational pesticide exposure on Canadian golf courses	Poplawski K, Garzia N, Nicol AM, Demers PA	22 nd International Conference on Epidemiology in Occupational Health (EPICOH). Oxford, UK, September 7-9, 2011.	Poster presentation
Occupational pesticide exposure surveillance for agriculture in Canada	Garzia N, Poplawski K, Nicol AM, Demers PA	22 nd International Conference on Epidemiology in Occupational Health (EPICOH). Oxford, UK, September 7-9, 2011.	Poster presentation
Pneumoconioses in British Columbia, Canada 1995-2006	Mooney D, McLeod C, Peters C, Xu F, Koehoorn M, Demers PA	22 nd International Conference on Epidemiology in Occupational Health (EPICOH). Oxford, UK, September 7-9, 2011.	Poster presentation
Occupational and Environmental Skin Carcinogens: Overview	Demers PA, Peters CE	5 th International Conference on Occupational & Environmental Exposure of Skin to Chemicals. Toronto, Ontario, June 2011.	Invited oral presentation
Estimating occupational exposure to skin carcinogens in Canada	Peters CE, Nicol AM, Demers PA	5 th International Conference on Occupational & Environmental Exposure of Skin to Chemicals. Toronto, Ontario, June 2011.	Oral presentation
Exposure to multiple pesticides and risk of non-Hodgkin lymphoma in men from six Canadian provinces	Hohenadel K, Harris SA, McLaughlin JR, Spinelli JJ, Pahwa P, Dosman JA, Demers PA, Blair A	3 rd Annual North American Congress of Epidemiology. Montreal, Quebec, June 21-24, 2011.	Poster presentation

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Cancer Incidence among Nordic Firefighters	<u>Demers PA</u> , Martinsen JI, Weiderpass E, Kjaerheim K, Lynge E, Sparén P, Pukkala E	3 rd Annual North American Congress of Epidemiology. Montreal, Quebec, June 21-24, 2011.	Oral presentation
Progress in the Development of a Canadian Workplace Exposure Database	Hall AL, Davies HW, <u>Demers PA</u> , Peters CE	American Industrial Hygiene Conference and Expo. Portland, Oregon, May 2011.	Oral presentation
Wood Dust and Cancer	<u>Demers PA</u>	International Wood Dust Symposium sponsored by the U.S. National Institute for Occupational Safety and Health. Portland, Oregon, May 2011.	Invited plenary presentation
The role of epidemiologic research in risk assessment: some challenges and opportunities	<u>Harris SA</u>	Society of Toxicology 50th Annual Meeting. Washington DC, March 6-10, 2011.	Invited platform presentation
Using the Rapid Inquiry Facility (RIF) to investigate the association between lung cancer incidence and air borne pollutants from steel and iron foundries in Hamilton, Ontario	Wanigaratne S, Holowaty E, Norwood T, <u>Harris SA</u> , Brown P	North American Association of Central Cancer Registries (NAACCR) Annual Conference. Quebec City, Quebec, June 19-26, 2010.	Oral presentation
Cancer and the environment: development of methods to prioritize carcinogens, estimate exposures and evaluate public health risks for the people of Ontario.	<u>Harris SA</u> , <u>Pahwa M</u> , Wanigaratne S, Norwood T, Holowaty E	North American Association of Central Cancer Registries (NAACCR) Annual Conference. Quebec City, Quebec, June 19-26, 2010.	Poster presentation
Occupational Carcinogens: Current Knowledge, Gaps, and Stakeholder Perspectives	<u>Demers PA</u> , <u>Blair A</u> , <u>Hohenadel K</u> , <u>Harris SA</u> , <u>Bukvic D</u> , <u>Pichora E</u> , <u>Marrett LD</u>	OCRC symposium: "Carcinogens in the Ontario Workplace: Work of the new OCRC" at the Canadian Association for Research on Work and Health (CARWH) Conference. Toronto, Ontario, May 29, 2010.	Oral presentation
Pesticides and Cancer: New Analyses of a Multi-Centre Case Control Study	<u>Blair A</u> , <u>Hohenadel K</u> , <u>Harris SA</u> , <u>Demers PA</u> , <u>McLaughlin JR</u>	OCRC symposium: "Carcinogens in the Ontario Workplace: Work of the new OCRC" at the Canadian Association for Research on Work and Health (CARWH) Conference. Toronto, Ontario, May 29, 2010.	Oral presentation
Ionizing Radiation Exposure and Risk non-Lung Cancers - A Study of the Ontario Uranium Miners	<u>Do MT</u> , <u>Marrett LD</u> , Purdham J, Lou W, Payne J	OCRC symposium: "Carcinogens in the Ontario Workplace: Work of the new OCRC" at the Canadian Association for Research on Work and Health (CARWH) Conference. Toronto, Ontario, May 29, 2010.	Oral presentation
Asbestos and Mesothelioma in Ontario	<u>Marrett LD</u>	OCRC symposium: "Carcinogens in the Ontario Workplace: Work of the new OCRC" at the Canadian Association for Research on Work and Health (CARWH) Conference. Toronto, Ontario, May 29, 2010.	Oral presentation
A survey of exposure data availability in Canada	Hall A, <u>Demers PA</u> , Peters CE, Davies HW	Canadian Association for Research on Work and Health (CARWH) Conference. Toronto, Ontario, May 29, 2010.	Oral presentation
Occupational exposure limits in Canada: A comparison across the provinces and territories	Peters CE, Sarkany D, <u>Demers PA</u>	Canadian Association for Research on Work and Health (CARWH) Conference. Toronto, Ontario, May 29, 2010.	Oral presentation
Evaluation of a physician letter to increase awareness of workers' compensation benefits for individuals with mesothelioma	McLeod C, Koehoorn M, Tamburic L, <u>Demers PA</u>	Canadian Association for Research on Work and Health (CARWH) Conference. Toronto, Ontario, May 29, 2010.	Oral presentation
Occupational Exposure to Antineoplastics in Canada	Hall AL, <u>Demers PA</u> , Peters CE	American Industrial Hygiene Conference and Expo. Denver, Colorado, May 22-27, 2010.	Oral presentation
An Update on the Research Activities of the Environmental and Occupational Working Group for the Ontario Health Study (OHS)	<u>Harris SA</u> , Ritter L, Arbuckle T, <u>Blair A</u> , Blahut L, Bus J, Hall JC, Mabury S, <u>Marrett LD</u> , Miller A, Nadalin V, Rasmussen P, Villeneuve PJ, Wheeler A, <u>McLaughlin JR</u>	21st Conference of the International Society for Environmental Epidemiology. Dublin, Ireland, Aug 25-29, 2009.	Poster presentation

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Variability of urinary metabolite levels of pesticides in turf applicators; implications for exposure measurement in prospective epidemiologic studies	<u>Harris SA</u> , <u>Villeneuve P</u> , Mays JE, Crawley C, Hurto K	21st Conference of the International Society for Environmental Epidemiology. Dublin, Ireland, Aug 25-29, 2009.	Poster presentation
Development of Environmental and Occupational Exposure Measurement Strategies for the Ontario Health Study (OHS)	<u>Harris SA</u> , Ritter L, Arbuckle T, <u>Blair A</u> , Bus J, Hall JC, Mabury S, <u>Marrett LD</u> , Miller AB, Rasmussen PE, <u>Villeneuve PJ</u> , Wheeler A, <u>McLaughlin JR</u>	Cohorts and Consortia. Banff, Alberta, June 17-19, 2009.	Poster presentation
An asbestos exposure database for asbestos mine/mill workers (1977-1994)	Giles Murphy T, Oudyk J, <u>Demers PA</u> , Bornstein S	Canadian Association for Research on Work and Health (CARWH) Conference. Toronto, Ontario, May 29, 2010.	Oral presentation
Estimating the burden of asbestos-related lung cancer	McLeod K, McLeod C, <u>Demers PA</u>	Canadian Association for Research on Work and Health (CARWH) Conference. Toronto, Ontario, May 29, 2010.	Oral presentation
Ontario's Occupational Cancer Research Centre (OCRC)	<u>Blair A</u> , <u>Harris SA</u> , <u>Pichora E</u> , <u>Brown J</u> , <u>Marrett LD</u>	Canadian Society for Epidemiology and Biostatistics (CSEB) and Association of Public Health Epidemiologists in Ontario (APHEO) Joint Conference. Ottawa, Ontario, May 25-28, 2009.	Oral presentation
Ionizing radiation exposure and risk of gastrointestinal cancers: A study of Ontario uranium miners	<u>Do MT</u> , <u>Marrett LD</u> , Purdham J, Lou W, Payne JI	Canadian Society for Epidemiology and Biostatistics (CSEB) and Association of Public Health Epidemiologists in Ontario (APHEO) Joint Conference. Ottawa, Ontario, May 25-28, 2009.	Oral presentation
Ionizing radiation exposure and risk of gastrointestinal cancers: A study of Ontario uranium miners.	<u>Do MT</u> , <u>Marrett LD</u> , Purdham J, Lou W, Payne JI	Canadian Society for Epidemiology and Biostatistics 4th National Student Conference. Ottawa, Ontario, May 23-25, 2009.	Oral presentation

Appendix 11: Presentations

Title	Presenters	Conference	Status
Shiftwork and health: A survey of knowledge needs and a review of interventions	<u>Pahwa M</u> , Mustard C, Saunders R, <u>Aronson K</u> , <u>Kramer D</u> , <u>Demers PA</u> , Neil S, Gotay C	Partners in Prevention Forum North Health and Safety Conference and Trade Show. Thunder Bay, Ontario, November 6-7, 2012.	Poster presentation, accepted
Vermiculite in Ontario	<u>Jardine K</u> , <u>Raj P</u>	Partners in Prevention Forum North Health and Safety Conference and Trade Show. Thunder Bay, Ontario, November 6-7, 2012.	Poster presentation, accepted
Making the link between respiratory cancer and exposure to asbestos: what we've learned and where we're going	<u>Moore K</u> , Kudla I, Oudyk J, <u>Kramer D</u> , Holness L	Partners in Prevention Forum North Health and Safety Conference and Trade Show. Thunder Bay, Ontario, November 6-7, 2012.	Poster presentation, accepted
Current state of knowledge regarding occupational carcinogens	<u>Demers PA</u>	Workplace Safety and Insurance Board Special Seminar. Toronto, Ontario, October 1, 2012.	Oral presentation
Asbestos exposure and the burden of asbestos-related disease in Canada	<u>Demers PA</u>	Screening, Early Detection and Treatment: The Canadian and Indian Experiences. Asbestos Disease Symposium sponsored by OHCOW and the Canadian Mesothelioma Society. Toronto, Ontario, September 27, 2012.	Oral presentation
Pesticide exposure and the risk of select cancers in Canadian men	<u>Pahwa M</u> , <u>Harris SA</u> , <u>Hohenadel K</u> , <u>Navaranjan G</u> , <u>Kachuri L</u> , Ritter L, <u>McLaughlin JR</u> , Spinelli JJ, <u>Pahwa P</u> , Dosman JA, <u>Blair A</u>	Health and Safety Association Liaison Committee (HSALC) quarterly meeting. Institute for Work and Health, Toronto, Ontario, September 7, 2012.	Invited oral presentation
Shiftwork and the Mining Industry	<u>Demers PA</u>	United Steelworkers National Mining Convention. Toronto, Ontario, June 12, 2012.	Oral presentation
Occupational cancer research: Current state of knowledge and data gaps	<u>Demers PA</u>	Canadian Registered Board of Occupational Hygienists Annual General Meeting. Toronto, Ontario, June 8, 2012.	Keynote oral presentation
Occupational Cancer in Ontario and Workplace Fatality Claims	<u>Del Bianco A</u> , <u>Demers PA</u>	British Columbia Environmental and Occupational Health Research Network Annual General Meeting & Spring Conference. Vancouver, British Columbia, May 31, 2012.	Poster presentation
Creation and analysis of a Canadian Exposure Studies Database	<u>Raj P</u> , <u>Jardine K</u> , Ge C, <u>Demers PA</u>	British Columbia Environmental and Occupational Health Research Network Annual General Meeting & Spring Conference. Vancouver, British Columbia, May 31, 2012.	Poster presentation
The OCRC's Developments in Occupational Cancer Research	<u>Del Bianco A</u> , <u>Pahwa M</u>	Partners in Prevention Forum North Health and Safety Conference and Trade Show. Thunder Bay, Ontario, November 6-7, 2012.	Oral presentation, accepted
Trends in compensated workplace fatalities in Ontario and Canada	<u>Del Bianco A</u> , <u>Demers PA</u>	Partners in Prevention Forum North Health and Safety Conference and Trade Show. Thunder Bay, Ontario, November 6-7, 2012.	Poster presentation, accepted
Occupational Cancer: Current Knowledge, Gaps, and the Role of Research	<u>Demers PA</u>	Partners in Prevention Health and Safety Conference and Trade Show. Mississauga, Ontario, May 1-2, 2012.	Oral presentation
Shiftwork – The New Carcinogen?	<u>Demers PA</u>	Partners in Prevention Health and Safety Conference and Trade Show. Mississauga, Ontario, May 1-2, 2012.	Oral presentation
Occupational exposure limits for carcinogens in Ontario workplaces: Opportunities to prevent and control exposure	<u>Pahwa M</u> , <u>Demers PA</u> , Ge C	Partners in Prevention Health and Safety Conference and Trade Show. Mississauga, Ontario, May 1-2, 2012.	Poster presentation

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Occupational Cancer is the Leading Cause of Workplace Fatalities	<u>Del Bianco A, Demers PA</u>	Partners in Prevention Health and Safety Conference and Trade Show. Mississauga, Ontario, May 1-2, 2012.	Poster presentation
New models for occupational cancer surveillance in Canada	<u>Demers PA, Harris A</u>	Institute for Work and Health Plenary. Toronto, Ontario, April 17, 2012.	Invited oral presentation
Occupational Cancer in Canada: Current State of Knowledge and Data Gaps	<u>Demers PA</u>	Alberta Occupational and Environmental Health Symposium. Calgary, Alberta, March 7, 2012.	Invited oral presentation
The OCRC and the role of Research in Occupational Cancer Prevention	<u>Demers PA</u>	CCS-BCY/UBC Reducing Exposures to Occupational Carcinogens Workshop. Vancouver, British Columbia, March 6, 2012.	Invited oral presentation
Carcinogens in the Environment	<u>Demers PA</u>	First Nations Environmental Health Innovations Network. Winnipeg, Manitoba, February 21, 2012.	Invited oral presentation
Occupational cancer surveillance using a Statistics Canada cohort	<u>Harris A, Hardt J, Demers PA</u>	University of British Columbia School of Population and Public Health's Occupational and Environmental Seminar Series. Vancouver, British Columbia, February 17, 2012.	Oral presentation
Asbestos Exposure and the Burden of Asbestos-related Disease in Canada	<u>Demers PA</u>	Asbestos Symposium organized by the Occupational Health Clinics for Ontario Workers. Toronto, Ontario, November 4, 2011.	Invited oral presentation
Exposure to Multiple Pesticides from Different Classes and the Risk of Hodgkin Lymphoma in Canadian Men	<u>Navaranjan G, Hohenadel K, Harris SA, McLaughlin JR, Spinelli JJ, Pahwa P, Dosman JA, Demers PA, Blair A</u>	Partners in Prevention Forum North Health and Safety Conference and Trade Show. Thunder Bay, Ontario, November 1-2, 2011.	Poster presentation
Occupational exposure limits for carcinogens in Ontario workplaces: Opportunities to prevent and control exposure	<u>Pahwa M, Demers PA, Ge C</u>	Partners in Prevention Forum North Health and Safety Conference and Trade Show. Thunder Bay, Ontario, November 1-2, 2011.	Poster presentation
Canadian exposure study database	<u>Raj P, Jardine K, Ge C, Demers PA</u>	Partners in Prevention Forum North Health and Safety Conference and Trade Show. Thunder Bay, Ontario, November 1-2, 2011.	Poster presentation
Exploring New Models for Occupational Cancer Surveillance in Canada	<u>Demers PA, Harris A</u>	Special seminar. US National Cancer Institute, Bethesda, Maryland, October 31, 2011.	Invited oral presentation
Occupational Cancer and the Research Program of the OCRC and CAREX Canada	<u>Demers PA</u>	Research Exchange Series of the Centre for Health and Safety Innovation. Mississauga, Ontario, October 18, 2011.	Invited oral presentation
How Widespread is Exposure to Environmental Carcinogens in Canada?	<u>Demers PA</u>	McMaster Institute for Environment and Health lecture series. Hamilton, Ontario, September 29, 2011.	Invited oral presentation
Preliminary Occupational Cancer Surveillance Results from a Canadian Census and National Tumour Registry Linkage	<u>Demers PA</u>	Workshop on occupational cancer surveillance hosted by the Nordic Occupational Cancer (NOCCA) Study Group. Mariehamm, Finland, August 29-31, 2011.	Invited oral presentation
Challenges and Opportunities in the Assessment of Burden	<u>Demers PA</u>	Symposium on the Assessment of the Burden of Work-Related Diseases hosted by the Finnish Institute for Occupational Health. Helsinki, Finland, August 26, 2011.	Invited oral presentation
How Widespread is Exposure to Environmental Carcinogens in Canada?	<u>Demers PA</u>	Canadian Partnership Against Cancer's Lunch and Learn lecture series, Toronto, Ontario, July 19, 2011.	Invited oral presentation
How Widespread is Exposure to Environmental Carcinogens in Canada: Results from the CAREX Canada Project	<u>Demers PA</u>	Toronto Cancer Prevention Coalition. Toronto, Ontario, June 14, 2011.	Invited oral presentation
How Does Something Get Labeled a Carcinogen?	<u>Demers PA</u>	Canadian Partnership Against Cancer's Cancer 101 lecture series. Toronto, Ontario, April 6, 2011.	Invited oral presentation
Mesothelioma in Ontario: Past, present & future	<u>Clements M, Marrett LD, Nishri D, Stegne M, Demers PA</u>	OCRC Research Day. Toronto, Ontario, March 23, 2011.	Symposium oral presentation

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Exposure to multiple pesticides and risk of non-Hodgkin lymphoma in Canadian men	<u>Blair A, Hohenadel K, Harris SA, Demers PA, McLaughlin JR</u>	OCRC Research Day. Toronto, Ontario, March 23, 2011.	Symposium oral presentation
Priorities for occupational cancer research in Ontario and Canada	<u>Demers PA</u>	OCRC Research Day. Toronto, Ontario, March 23, 2011.	Symposium oral presentation
Historical exposure to wood dust in Ontario from 1981 to 1996	<u>Arrandale V, Hall A, Peters CE, Demers PA</u>	OCRC Research Day. Toronto, Ontario, March 23, 2011.	Symposium oral presentation
The effectiveness of asbestos-related interventions in reducing cancer rates: a systematic review	<u>Hohenadel K, Straif K, Demers PA, Blair A</u>	OCRC Research Day. Toronto, Ontario, March 23, 2011.	Symposium oral presentation
How Widespread is Exposure to Environmental Carcinogens in Canada?	<u>Demers PA</u>	University of Guelph Annual Toxicology Symposium. Guelph, Ontario, March 5, 2011.	Invited oral presentation
Searching for Occupational Cancer Prevention Policies	<u>Demers PA</u>	Canadian Partnership Against Cancer Webinar Series. March 3, 2011.	Oral presentation
How Widespread is Exposure to Environmental Carcinogens in Canada?	<u>Demers PA</u>	University of Toronto Environment and Health Lecture Seminars. Toronto, Ontario, February 3, 2011.	Invited oral presentation
Estimating the Number of Canadians Exposed to Workplace Carcinogens	<u>Demers PA</u>	St. Michael's Hospital Occupational Medicine Rounds. Toronto, Ontario, January 12, 2011.	Invited oral presentation
Exposure to Occupational Carcinogens	<u>Demers PA</u>	Institute for Work and Health's Plenary Lecture Series. Toronto, Ontario, November 2010.	Invited oral presentation
Occupational Cancer	<u>Demers PA</u>	United Steelworkers International Health and Safety Congress. Pittsburgh, Pennsylvania, October 2010.	Invited oral presentation
Occupational Cancer; Current and Future Issues	<u>Demers PA</u>	Association of Workers' Compensation Boards of Canada Learning Symposium. Quebec City, Quebec, October 2010.	Invited oral presentation
The prevalence of shift work in Canada	<u>Demers PA, Wong I, McLeod C</u>	Scientific Symposium on the Health Effects of Shift Work. Toronto, Ontario, April 12, 2010.	Symposium oral presentation
Asbestos and cancer in Ontario and the Occupational Cancer Research Center	<u>Marrett LD</u>	Asbestos surveillance and disease compensation think tank. Toronto, Ontario, March 3, 2010.	Oral presentation
The Ontario Health Study (OHS): Occupational and Environmental Research Priorities, Exposure Assessment Strategies, Challenges, and Opportunities	<u>Harris SA</u>	OCRC Research Day. Toronto, Ontario, November 19, 2009.	Oral presentation
The Ontario Health Study (OHS): Occupational and environmental research priorities, exposure assessment strategies, challenges, and opportunities	<u>Harris SA</u>	OCRC Research Day. Toronto, Ontario, November 19, 2009.	Oral presentation
Results of the 2009 OCRC Stakeholder Consultation	<u>Blair A</u>	OCRC Research Day. Toronto, Ontario, November 19, 2009.	Oral presentation
Occupational Cancer: Knowledge and Needs	<u>Blair A</u>	Institute for Work and Health. Toronto, Ontario, November 4, 2009.	Oral presentation
Confounding and Exposure Misclassification in Occupational Epidemiologic Research	<u>Blair A</u>	Dalla Lana School of Public Health. Toronto, Ontario, October 8, 2009.	Oral presentation
Occupational Cancer Research Centre	<u>Blair A</u>	IAPA Safety Solutions 2009 Regional Conference & Trade Show. Sudbury, Ontario, October 6, 2009.	Oral presentation
Epidemiologic studies of cancer in agricultural populations	<u>Blair A</u>	Workplace Safety and Insurance Board. Toronto, Ontario, July 6, 2009.	Oral presentation
Occupational Cancer Research Centre: A partnership for the prevention of occupational cancer	<u>Marrett LD</u>	Canadian Cancer Society Ontario Division, Community Development Managers Meeting. Toronto, Ontario, May 25, 2009.	Oral presentation
Update of the Occupational Cancer Research Centre	<u>Marrett LD, McLaughlin JR</u>	Prevention, Screening and Population Studies Board Committee. Toronto, Ontario, May 19, 2009.	Oral presentation
Occupational cancer research: future directions.	<u>Marrett LD</u>	University of Toronto Epidemiology Seminar Series. Toronto, Ontario, January 14, 2009.	Oral presentation