



# I.ARE.H News 2005 - 2006

## A Message from the Dean of Medicine and the Chair of our Board:

### "Building the Future"

It is perhaps fitting that the 20th Anniversary of the Centre for Agricultural Medicine—the predecessor of the Institute of Agricultural Rural and Environmental Health (I.ARE.H)—should be the year in which we establish the Canadian Centre for Health and Safety in Agriculture.

Building on 20 years of outstanding leadership in agricultural safety and rural health issues, I.ARE.H has evolved, almost naturally into a new national centre of excellence, the Canadian Centre for Health and Safety in Agriculture.

The issues are many: excess prevalence of lung trouble in farmers and exposed workers; a totally unacceptable 1256 adults and children killed and 14,980 people hospitalized over 10 years because of farm injuries; high rates of stress and suicide; skin problems; hearing loss; risks to water supplies and food contamination; and the widening gap in rural health services.

All of these create an urgent need for a distinct, coordinated plan for Canada. In the United States, the government supports 10 regionally-placed University-based centres for research, training and knowledge translation for health and safety in agriculture and related industries.

In Canada, the development of the Canadian Centre for Health and Safety in Agriculture, provides for both scientific depth and geographic breadth.

With a strong national laboratory at the University of Saskatchewan, a national training program, a national network of 66 scientists at 13 universities and other agencies across

Canada, a superb Saskatchewan-based outreach program involving 26,000 farm families through the rural municipal system, a national knowledge translation program, strong linkages with the Cooperative and private sectors through our Founding Chairs Development Fund, and with our relationship with the Canadian Agriculture Safety Association which we are proud to have founded, we are addressing a serious public health problem.

The issue is nothing less than a human resources crisis in Agriculture in Canada. Agriculture is an \$30/billion/year industry in our country. The Canadian Centre for Health and Safety in Agriculture supports both the human and economic dimensions!

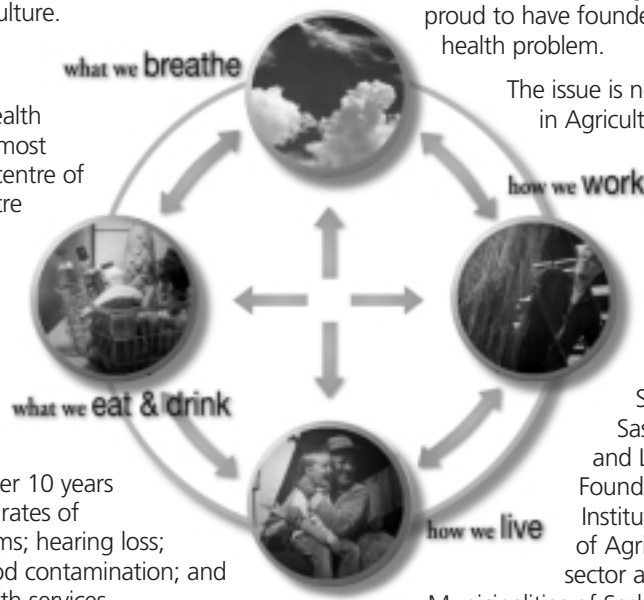
As usual, we could not be here without our outstanding local and national support. The University of Saskatchewan, Government of Saskatchewan (Departments of Agriculture and Labour), Saskatchewan Health Research Foundation, Government of Canada (Canadian Institutes of Health Research and Department of Agriculture), our partners in the private sector and the cooperatives, the Rural

Municipalities of Saskatchewan, and above all, the people we serve - the farmers and rural people of Saskatchewan and Canada - all contribute to our success.

Finally, to our students, staff and faculty, and cooperating scientists and suppliers across Canada and internationally, our sincere thank you as we boldly address the future.

Sincerely,

**William Albritton**, Dean, College of Medicine  
**Terry Baker**, Chair, Board of Directors, and Chairman of the Board, Saskatchewan Wheat Pool



# Research

## Strategies to Improve the Care of Persons with Dementia in Rural and Remote Saskatchewan

In 2003 a multidisciplinary team of researchers at the University of Saskatchewan received a 5-year grant to conduct a program of research aimed at improving dementia care in rural and remote areas of Saskatchewan. The goals of the research are to increase the availability of specialized personnel and services providing assessment and management of dementia, to improve the accessibility of programs supporting family members and paid caregivers, and to improve the acceptability of services for individuals with dementia and their caregivers in rural areas. Examples of studies now underway include the implementation and evaluation of a new one-stop multidisciplinary Rural and Remote Memory Clinic that provides assessment, diagnosis, and management of early stage dementia for seniors living in rural and northern Saskatchewan. Telehealth videoconferencing is used for pre-clinic assessment and follow-up. At the one-day clinic in Saskatoon, patients have a comprehensive assessment by a team of specialists. Evaluation of the clinic and telehealth component will provide valuable information about the usefulness of this approach. Team members are also evaluating a program developed by the Alzheimer Society of Canada that is designed to assist nursing homes in assessing the care provided to residents with dementia and to develop strategies aimed at improving areas of care that front-line staff has targeted. This study is being conducted in two small rural nursing homes in Saskatchewan. A focus on remote northern Saskatchewan has led to three separate studies that are examining assessment of dementia in aboriginal seniors, access to support services for dementia, and registered nurse perceptions of dementia care in northern health care settings. Funding is provided by the Canadian Institutes of Health Research, University of Saskatchewan, Saskatchewan Health Research Foundation, and the Alzheimer Society of Saskatchewan. Telehealth Saskatchewan provides personnel and technical support.

## Work Experiences of Nursing Aides Employed in Rural Nursing Homes

Behavioral disturbances, including physical aggression, are a common symptom of Alzheimer Disease and other types of dementia, and these behaviors are a frequent cause of admission to nursing homes when family members can no longer manage care at home. Nursing aides, who provide most of the personal care to nursing home residents, are often exposed to physically aggressive behavior from residents. A team of researchers at the University of Saskatchewan is conducting a study to learn from nursing aides what they perceive as the causes of physically aggressive resident behavior and how they respond to these situations. Because earlier studies have been conducted in large urban facilities, this study will focus on rural nursing homes, which are often smaller and have less access to specialized programs and resources. Nursing aides from 11 rural facilities documented incidents of aggression over a 144-hour period, and participated in focus groups aimed at exploring the data reported in the diaries. Results will improve our understanding of these incidents and help in identifying factors that lead to increased risk of aggressive behavior. Funded by: The Saskatchewan Health Research Foundation.

## The Cost of Developing and Implementing a Pathway for Congestive Heart Failure: Not an Inexpensive Journey

The costs of developing and implementing an integrated care pathway (ICP) for Congestive Heart Failure were tracked prospectively and allocated to either development or implementation. The development took 1,980 hours of staff time at a salary cost of \$67,800. The ICP implementation took 2,083 hours of personnel time at a salary cost of \$66,900. Even though an available pathway was adapted for local use, a substantial amount of time and money was required. Funded by: Health Surveillance and Analysis, First Nations and Inuit Health Branch-Manitoba Region, Health Canada, Winnipeg.

## Grainhandlers, Genetic Polymorphisms and Respiratory Health

A genetic polymorphism is a variant of a gene which occurs in at least one percent of a population. Genetic polymorphisms, occupational exposures and lifestyle factors may each contribute to declines in respiratory health. Currently employed grainhandlers volunteered for an international study to investigate the relative contributions of genetic polymorphisms and cigarette smoking. The results for the first polymorphism studied, TNF-alpha -308\*1/\*2 demonstrated that current smokers with at least one \*2 allele have statistically significantly worse pulmonary function as measured by spirometry compared to nonsmokers with the \*2 allele. Current smokers with the \*1/\*1 genotype have better lung function than \*1/\*1 exsmokers or nonsmokers. Funded: In kind by I.ARE.H and by Kumamoto University, Japan.

## Cross-Canada Study of Pesticides and Health

The Cross-Canada Study of Pesticides and Health focussed on the role of pesticide exposure and family history of cancer as potential risk factors for four types of cancer (non-Hodgkin's Lymphoma, Hodgkin's Disease, Soft Tissue Sarcoma and Multiple Myeloma) among men. The study obtained detailed pesticide exposure information which permitted calculation of estimates of risk based broadly on job titles, on classes of pesticides and specifically on individual pesticides incorporating dose/response measures. A positive family history of cancer approximately doubled risk of these rare types of tumours. DEET was shown to enhance the permeability to 2,4-D of rubber gloves commonly recommended for use by farmers when exposed to ultraviolet rays mimicking sunlight in a laboratory study (Moody and Nadeau, Am Ind Hygiene Assoc J., 1992). We recently reported that farmers exposed to the insect repellent DEET, selected phenoxyherbicides and who used rubber gloves when applying herbicides increased their risk of developing non-Hodgkin's lymphoma. This first report has not yet been replicated in the scientific literature. For information on safe pesticide handling practices, view our website <http://iareh.usask.ca/> or contact the Agricultural Health and Safety Network ([aghealthandsafety@usask.ca](mailto:aghealthandsafety@usask.ca)). Funded by: Health Canada, British Columbia Health Research Foundation and I.ARE.H.

## Saskatchewan Farm Injury Cohort Study

Injury is a leading cause of death and disability among agricultural populations in Canada. Studies of these populations need to examine characteristics of farm operational practices as determinants of injury, as well as how physical, economic and social settings work to protect farm people from injury. This study will examine the importance of operational risk factors as

potential causes of injury. There will be a particular focus on vulnerable groups within the farm population (children, farm owner-operators, young workers, and the elderly). This study will be conducted over four and one half years. An interdisciplinary team of investigators from the University of Saskatchewan, Queen's University, Monash University and the Marshfield Medical Research Center are conducting the study with the co-operation of selected Rural Municipal Councils in Saskatchewan. Approximately 6,000 farms and 15,000 individuals on farms in Saskatchewan will be recruited to participate. The study commenced on October 1, 2005 and will be ongoing to March 2010. Funded by: Canadian Institutes of Health Research



*Dr. W. Pickett, L. Hagel and Dr. J.A. Dosman*

### **Canadian Agricultural Injury Surveillance Program (CAISP) – Saskatchewan Project**

The surveillance of fatal and hospitalized farm-related injuries occurring on Saskatchewan farms is ongoing. The most currently available surveillance results are published at the CAISP website [www.caisp.ca](http://www.caisp.ca).

The third round of surveillance of hospitalized farm related injuries is currently underway. An updated report on Saskatchewan farm injury surveillance results will be available in 2006. Funded by I.ARE.H, Occupational Health and Safety Division of Saskatchewan Labor and the Canadian Agricultural Injury Surveillance Program (CAISP) of the Canadian Agricultural Safety Association and Agriculture and Agri-Food Canada.

### **Humboldt Study of Respiratory Disease**

As part of the "Endotoxin and the Lung" project, adults and children in the community of Humboldt, SK participated in the study by completing questionnaires, pulmonary function testing and skin prick allergy testing as well as with providing samples for genetic testing in 2003/04. At present, statistical analyses are being completed by several researchers and graduate students regarding the relationships among genetic and environmental factors to respiratory disease. Based on data collected from the Humboldt cross-sectional study, children who were 6 to 17 years of age were selected as either cases (asthma or wheeze) or controls. Data collection for this part of the project was started in March 2005 and will be completed before summer of 2006. Through the use of questionnaire data, saliva samples, pulmonary function testing, floor dust measurements and two week peak flow monitoring of cases, a more in depth examination of the home and personal environment will be considered in relation to respiratory outcomes.

### **Mental Distress of the Canadian National Population Health Surveys Participants Who Reported Non-Malignant Respiratory Diseases**

Mental health is as important as physical health to the overall well-being of individuals, societies and countries. It has been reported that depression and chronic diseases have additive adverse effects on patients' functional status and well-being. We are using Statistics Canada's longitudinal National Population Health Survey (NPHS) data to investigate the effects of demographic variables, social, life-style, health-related and other factors on the longitudinal changes of mental distress scores among the NPHS participants who self-reported physician diagnosed respiratory diseases, specifically asthma and chronic bronchitis.

### **Exposure to Endotoxin and the Lung**

Exposure to endotoxin results in or is associated with inflammatory response, airway remodeling and development of airways obstruction and/or asthma in exposed workers. Mutations at the Toll-like receptor 4 (TLR4) locus confer respiratory hyporesponsiveness to inhaled endotoxin. The range of human respiratory response to endotoxin is presumably governed by polymorphisms of other genes yet to be described. Funded by Canadian Institutes of Health Research.

### **Longitudinal Study with Farmers**

In February 2004, a longitudinal study was completed with swine farmers, grain farmers and non-farming rural dwellers. This group of participants had been seen in 1990/91 and 1994/95 as well. The data gathered from the 550 participants is currently being analysed. Funded by: Canadian Institutes of Health Research.

### **Cross-Sectional Study with Fully Employed Swine Workers**

As the swine industry is developing in the Prairies, the farming portrait is also changing with bigger operations that rely strongly on employed labour compared to owner operated barns. In February 2004, a cross-sectional study was started to collect data on fully employed swine workers and non-farming rural dwellers. This makes the present research unique, as previous studies were done with swine farmers, who generally had mixed exposures from swine and grain farming. As of April 2006, 813 persons have been tested, 409 swine workers and 404 non-farming rural residents. Testing may be continued in the Fall of 2006 to recruit more barn workers and non-farming rural residents. Funded by: Canadian Institutes of Health Research.

### **Acute Exposure to High Levels of Endotoxin – Previously Non-Exposed "Naïve" Subjects**

The objective of this study is to evaluate relationships between high-concentration endotoxin exposure, genetic polymorphisms in endotoxin response genes and acute respiratory outcomes in exposures in intensive livestock confinement buildings. To test the hypothesis, a population of naïve previously unexposed individuals derived from a population with specific identified polymorphisms of genes known to affect endotoxin responsiveness have been exposed to a pig barn environment for a period of 5 hours. Qualitative and quantitative differential respiratory and immune responses to high-dose endotoxin exposure in swine barns have been measured. Data collection took place between September

2005 and April 2006. Data will be statistically analyzed in the coming months. Funded by: Canadian Institutes of Health Research.

## Canadian Grainhandlers and Their Respiratory Symptoms

Labour Canada, the Grainhandlers' union, researchers and grainworkers have cooperated in a longitudinal study of Canadian grain workers' respiratory health which was begun in 1978.

Data on respiratory symptoms, smoking status, occupational exposures and pulmonary function were obtained approximately every 3 years to determine risk factors influencing the prevalence of chronic respiratory symptoms (wheeze, shortness of breath, excessive sputum, and cough). The prevalence of chronic respiratory symptoms had an increasing trend with increasing number of years in the grain industry from 1978 to 1987 before dust control was fully implemented. For current smokers, ex-smokers, and non-smokers after recommended dust control measures were implemented, there were reductions in the prevalences of these respiratory symptoms indicating that grain dust control was effective. Current smokers continued to experience the highest prevalence of respiratory symptoms compared to exsmokers and lifetime nonsmokers. Funded by: Labour Canada.

## Prairie Ecosystem Study (PECOS)

PECOS was designed as a multi-disciplinary study to investigate relationships among the people, the biota and the environment in a defined geographical area in south-western Saskatchewan. The human health component has reported (1) Establishment of norms for rural people using a neuropsychological test battery with measures of intellectual ability, tactile sensitivity, motor speed and dexterity, grip strength, learning and memory, visuomotor scanning speed, attention, verbal fluency and constructional and problem solving skill. (2) An association between lifetime occupational exposure to insecticides as measured by questionnaire and an increased risk of injury within the previous two years. (3) Associations between higher levels of antinuclear antibody positivity and lifetime exposure to pyrethroid insecticides. (4) Finding of detectable levels of bromoxynil, a herbicide, in the plasma of a subset (19.3%, 29.8% of males, 7.1% of females) of farm and rural residents in midwinter, months after freeze-up and possible proper use of the compound. (5) Bromoxynil was more likely to be found in the plasma of persons with higher body mass indexes (weight divided by height squared) in the spring. Funded by: Eco-Research Program, Tri-Council Secretariat, Canada and by the National Health Research Development Program, Health Canada.

# Capacity Building

## Founding Chairs Program

The "Building the Future" campaign that commenced in 2005 in conjunction with the University of Saskatchewan's "Thinking the World of Our Future" campaign gained momentum in the last few months of 2005. Members of the Founding Chairs Development Fund Committee have been working diligently to secure funds for the new Canadian Centre for Health and Safety in Agriculture to be established in new facilities on the campus. Industry, corporations and individuals are being invited to help realize the vision for the Center through their contributions for equipment, special research projects, students' education and knowledge translation.

To recognize the first four companies who have made a commitment, we are planning a Launch before the end of June 2006. Subsequent announcements will be made throughout the year

## Graduate Training Program in Public Health and the Agricultural Rural Ecosystem (PHARE):

The CIHR Strategic Training Program entitled, "Public Health and the Agricultural Rural Ecosystem" (PHARE) provides scholarship support to graduate students at the Master's, Ph.D, and Postdoctoral level and seeks to increase the knowledge needed to address the challenges facing rural people as they seek a healthy, safe and sustainable lifestyle. The following training scholarships were awarded in 2005 – 2006: Postdoctoral fellows – Jakob Bonlokke, Université Laval; Benjamin Nehmé, Université Laval and Yongxin Li, University of Saskatchewan; PhD – Hope Bilinski, Brenda Brunner, Mark Bruner, Chandrashekhar Charavaryamath, Tara-Leigh Fleming, Justin Gawaziuk, Julie Kosteniuk, Shawnda Lanting, University of Saskatchewan, Joshua Lawson, University of Saskatchewan and University of Alberta; Valérie Létourneau, Université Laval; Rasha Maal-Bared, University of British Columbia; William Midodzi, University of Alberta; Mikiko Terashima, Dalhousie, Masters – Leah Bartlett, Dalhousie; Allison Cammer, Patrina Gunness, Vanessa Juneau, Erin Laing, Merry-Lynn MacDonald, Raegan Osicki, University of Saskatchewan; Melissa Girard, Université Laval, Xuran Jiang, Queen's University, Carla Shaw, Nova Scotia Agricultural College.



Public Health and the Agricultural Rural Ecosystem (PHARE)

## Canadian Centre for Health and Safety in Agriculture (CCHSA) /Centre Canadien De Santé ET Sécurité En Milieu Agricole (CCSSMA)

The overall objective of the CCHSA is to address the health of people working and living in the agricultural rural ecosystem. Its scope involves researchers from various disciplines working in more than twenty institutions across Canada, providing the basis for the CCHSA Scientific Network. The working committees and the Decision Makers Advisory Council have been instrumental in our success by contributing to strategic planning. The Annual Scientific meeting held in Québec City in October, 2005 brought together committee members, researchers and students in a common focus aimed at enhancing research productivity. All committees met and a pre-conference workshop was held in collaboration with the Canadian Rural Health Research Society (CRHRS) Conference in which 51 network members and trainees presented abstracts and concluded with a Round Table Meeting. The Mentoring Program which fosters positive mentor-mentee

relationships for junior CCHSA scholars held a research mentoring workshop in Québec City. The Knowledge Translation (KT) Program saw the development of three issues of a national newsletter entitled "Agricultural Health and Injury Prevention: Research and Control". The Pilot project program funded four interdisciplinary teams of researchers and their stakeholders with core infrastructure support to access other research funds to develop integrated programs of research and knowledge exchange. The Junior/Senior Faculty Release Time Support Program in which applicants devote their research activities to the CCHSA Themes awarded one junior and one senior faculty with support. The CCHSA also supports three Postdoctoral and 13 PhD scholarships through the CIHR Strategic Training Program Grant "Public Health and the Agricultural Rural Ecosystem" (PHARE) in a seamless manner with leveraged participation by other organizations in the training and mentoring of students. Funded by the CIHR Centres for Research Development

## Student's Research

**Allison Cammer**, MSc Candidate. **Thesis Title:** Exploring issues of access to dementia care services by older adults in Northern Saskatchewan. Community Health and Epidemiology. Indigenous Peoples' Health Research Graduate Scholarship recipient, University of Saskatchewan.

**Pamela Farthing**, MSc Candidate. **Thesis Title:** Farming Activities and Respiratory Health in School Age Children. I.ARE.H and Community Health and Epidemiology, University of Saskatchewan. Canadian Nurses Respiratory Association Fellowship and Founding Chairs Fellowship recipient.

**Sunita Ghosh**, PhD Candidate. **Thesis Title:** Statistical Modeling of Longitudinal Complex Survey Data with Binary Outcome. College of Graduate Studies and Research Scholarship recipient.

**Maureen Horne**, MSc Candidate. **Thesis Title:** Immunization and coverage among children under 3 years of age in rural Pakistan. Community Health and Epidemiology and I.ARE.H. Founding Chairs Scholarship recipient.

**Chandima Karunanayake**, PhD Candidate. **Thesis Title:** Multivariate Poisson Markov-dependent finite mixture models for analysis of weed counts. Department of Mathematics & Statistics and Institute of Agricultural Rural and Environmental Health, University of Saskatchewan.

**Shelley Kiryckuck**, PhD Candidate. **Thesis Title:** Endotoxin and dust distribution in poultry barns in Saskatchewan, Interdisciplinary Studies, Industrial Hygiene. Funded by I.ARE.H.

**Joshua Lawson**, PhD Candidate. **Thesis Title:** Effects of endotoxin and tobacco smoke on asthma and asthma-like symptoms in children and adolescents. Alberta Heritage Foundation for Medical Research (AHFMR) and Public Health and the Agriculture Rural Ecosystem (PHARE) Scholarship recipient.

**Merry-Lynn McDonald**, MSc Candidate. **Thesis Title:** Genetic Epidemiology of Atopy and the Hygiene Hypothesis; Interdisciplinary Studies, Public Health and the Agricultural Rural Ecosystem (PHARE) Masters' Scholarship.

**Claire McGuigan**, MSc Candidate. **Thesis Title:** Nitrates, gene expression, and cytotoxicity in human cell lines. College of Nursing and Department of Anatomy & Cell Biology. NSERC Canada Graduate Scholarship recipient.

**Gayatri Vishwakarma**, PhD, is working as Post Doctoral Fellow under the supervision of Dr. Punam Pahwa. **Her academic background:** Bachelor's in Computer Applications, Masters in Agricultural Statistics and Ph.D. in System Science & Statistics from Jabalpur, India.

**Nicole White**, M.Sc. **Thesis Title:** Asthma medication utilization in Saskatchewan. University of Saskatchewan. Department of Community Health and Epidemiology, College of Medicine. Thesis defended February 2006.

## Services

### CANWORKSAFE

CANWORKSAFE continued to provide respiratory (spirometry) and hearing (audiometry) surveillance to Saskatchewan grain workers. Approximately 150 workers from around the province underwent surveillance in 2005, not including those participating as part of a research project. In addition, CANWORKSAFE started planning for a Weyerhaeuser Asbestos Worker Monitoring program to take place in the spring of 2006, with estimates of approximately 100 workers participating.

CANWORKSAFE programs provide an opportunity for workers to have a regular health screening focused on their occupational exposures, and to receive current health information and education. This type of regular screening can help detect changes to health over time, identify changes or problems early and provide intervention, and educate workers to help reduce the risk of developing occupational health problems. Visit the website for more information on programs at:

<http://iareh.usask.ca/occhealth/services.php>

### Agricultural Health and Safety Network

In an effort to provide agricultural occupational health and safety services to Saskatchewan farm families, I.ARE.H and SARM joined forces in 1988. Over the past year six RMs joined the Network, four dropped out and one returned. One hundred and fifty-nine RMs are members of the Network. The Network continues to benefit from the input of the Steering Committee which is comprised of six RM leaders each representing one of the six divisions of SARM.

### Rural Health Extension Programme's 2005-2006 Initiatives

**Farm Stress Inventory:** A "Farm Stress Inventory" was included in the Annual Package. Recipients were asked to complete the inventory and return it to the Network. The Network wants to give farmers the opportunity to have their voice recognized to inform key players in Saskatchewan agriculture of how difficult the farming situation has become. The inventory takes five minutes to complete. The participant's identity will not be known but their voice will be heard. This farm stress project is intended to magnify Saskatchewan farmers' voices.

**Farm Safety Radio Ads:** One hundred and sixty farm safety radio messages aired on a 24 hour clock during March on both 600 CJWW AM and HOT 93 FM. The background music on messages is "It Can't Happen to Me" by Canadian Country Artist Charlie Major which states "It can't happen to me. It's always someone else, you see". A variety of farm safety messages that apply to farm owners, operators, workers and family members were broadcast to raise awareness of farm safety activities and themes of agricultural risk management. Entanglements, runovers, stress, noise, ATVs, personal protective equipment and Hantavirus are topics that are covered in the messages.

The Canadian Agricultural Safety Association, I.ARE.H, Safe Saskatchewan and Agriculture and Agri-Food Canada funded this project.

### Media Award for Excellence in Farm Injury Control Reporting:

In 2002, with the assistance of the Canadian Agricultural Safety and Health Program, I.ARE.H established a Media Award for Excellence in Farm Injury Control Reporting. The award's objective

is to encourage Saskatchewan media to report on farm injuries as preventable and predictable events. Media kits were mailed to newspaper, radio and television outlets throughout Saskatchewan to encourage responsible farm injury control reporting. The 2005 Media Award for Excellence in Farm Injury Control Reporting was presented to 1050 CJNB/102.3 CJNS radio for its radio series entitled *Beating the Odds – The Farming Safety Checkup*. CJNB 1050 is heard in the North Battleford area and 102.3 CJNS is heard in Meadow Lake.

### Farm Injury Control Summit

On December 6th, 2005, the Agricultural Health and Safety Network and the Farm Stress Unit invited Jon Shearer, a sleep specialist from Algonquin College in Ottawa, to work with a crowd of over 150 delegates from across Saskatchewan. Jon helped the delegates to better understand sleep and identified easy, inexpensive ways farmers can make sleep work more effectively for them to reduce fatigue and stress and ultimately the risk of injury.

This Summit was organized by the Agricultural Health and Safety Network and the Farm Stress Unit with sponsorship from Saskatchewan Agriculture and Food, the Canadian Agricultural Safety Association, Agriculture and Agri-Food Canada, the College of Agriculture's Cyril Capling Trust Fund and SaskTel for the benefit of delegates from community agencies and organizations, health districts, individual farm families, RMs and their councilors and provincial government employees who work in agriculture. The photographic exhibit *OffGuard* was displayed at Summit VII.



*Jon Shearer, sleep specialist, at the farm injury control summit on Dec. 6, 2005.*

### New Resources:

**OffGuard Photographic Exhibit:** A national edition of the *OffGuard* catalogue was created. Provincial farm injury statistics were replaced with national statistics for use when the exhibit travels outside the province. The Saskatchewan farm injury statistics have been updated and are profiled with the new national *OffGuard* catalogue or existing Saskatchewan catalogues. This national *OffGuard* catalogue and its didactic panels have been translated into French by the Office of French Language Coordination and colleagues in Quebec. The updated English and French *OffGuard* catalogues are available. The Canadian Agricultural Safety Association, I.ARE.H and Agriculture and Agri-Food Canada funded this project.

**Rural Stress Toolbook:** The Toolbook has been revised after farmers and health care professionals who attended Summit VII evaluated the resource through questionnaires and focus groups. Feedback was analyzed by an Applied Psychology graduate

student and a second edition of the Rural Stress Toolbook was created and entitled *Difficult Times: Stress on the Farm*. Funded by: The Canadian Agricultural Safety Association, I.ARE.H and Agriculture and Agri-Food Canada.

### Summit VI Planning and Policy Document

A planning document regarding training for agricultural workers in Saskatchewan was prepared from the proceedings of the Saskatchewan Farm Injury Control Summit VI held November 8th, 2004 entitled *Rights & Responsibilities of Farm Owner/Operators to Ensure a Safe Workplace*. The proceedings of Summit VI were analyzed by members of the I.ARE.H. The key themes that were identified and developed to form the basis of this planning document are: the obligation of farmers to train their employees, making training farm employees a priority, campaigns for farmers and their employees regarding training resources in Saskatchewan and, support that is needed from members of the agricultural industry to aid farmers' employee training initiatives. Funded by: The Canadian Agricultural Safety Association.

### Program Delivery:

Respiratory Health Program for Farmers Drop-in clinics were held in six RMs: Cymri, (#36), Laurier (# 38), Webb (#138), Willowdale (#153), Good Lake (#274), and Glenside (#377). The Hearing Conservation Program for Farmers Drop-in clinics were held in five RMs: Cymri (#36), Wawken (#93), Laurier (# 38), Willowdale (#153), Webb (#138).

Meadow Lake Outreach Ministries coordinates an employment readiness program for aboriginal and northern adults aged 18-45 who are working to gain skills for future employment. The Network prepared and delivered a one day eight hour Farm Safety component for the employment readiness program four times in the past year.

### Newsletters:

Network News is a newsletter produced and delivered twice a year to all farm families in the Network. It focuses on health and safety issues in rural Saskatchewan, research updates and Network activities. Network News Fall 2005 covered Summit VII information, highlighted the SARM scholarship winner, and introduced two new staff members. The Network News Fall 2005 was a scaled down version delivered in November 2005 because the newsletter printers ceased operations and took the original Network News Fall 2005 edition with them. Network News Spring 2006 delivered with the Annual Package covers railway crossing safety, respiratory clinics, information on the Saskatchewan Farm Injury Control Project, a report on Summit VII *Sleepless in Saskatchewan* and directions for cleaning mouse infested areas.

### Student Scholarship:

Initiated in 1995 with SARM and the continued support of the Founding Chairs, this scholarship is awarded each year to a grade 12 student for a well written farm safety essay to be applied to their post secondary education tuition. The year's winner is Brenna Dureault of the RM of Wolsely (#155). Brenna's scholarship will be applied to her tuition at the University of Saskatchewan, College of Agriculture.



*Brenna Dureault*

## Agricultural Health and Safety Training for Nurses:

Regional Health Authorities have identified a public health or primary care nurse to act as farm safety and health consultants in all ten health regions and partner when possible with the Network to offer programs and services to farm families across Saskatchewan. An annual professional development day for the group was held December 7th, 2005 in conjunction with Summit VII Sleepless in Saskatchewan. The day included a workshop on communication skills led by staff from the Farm Stress Unit and a discussion of the future directions of the Agricultural Health and Safety Nurses program.

### Healthworks column in *The Rural Councilor*

*The Rural Councilor* continues to host a column written by Network staff. Each article focuses on farm health and safety concerns. This year's topics included:

- Farm Emergency Preparedness: How ready are you?
- Water: Are you getting enough?
- It's not (just) city kids who get hurt on farms
- The Agricultural Health & Safety Network Who are we? What do we do for your RM?
- RM of Humboldt No. 370 Student Awarded Scholarship at SARM convention

## Papers and Technical Reports

**Chad KE, Reeder BA, Harrison EL, Ashworth NL, Sheppard MS, Schultz SL, Lindstrom BG, Fisher KL, Lawson JA.** Profile of physical activity levels in community dwelling older adults. *Medicine and Science in Sports and Exercise*, 2005, 37: 1774-84

**Charavaryamath C, Janardhan KS, Townsend HG, Willson P, Singh B.** Multiple exposures to swine barn air induce lung inflammation and airway hyper-responsiveness. *Respiratory Research*, 2005, Jun; 6 (1):50.

**Chen Y, Rennie D, Cormier Y, Dosman JA.** Sex specificity of asthma associated with objectively measured body mass index and waist circumference: The Humboldt Study. *Chest*, 2005, 128(4):3048-3054.

**Chen Y, Rennie DC, Lockinger LA, Dosman JA.** Gender, environmental tobacco smoke and pulmonary function in rural children and adolescents: The Humboldt Study. *Journal of Agricultural Safety and Health*, 2005, 11(2): 167-173.

**Day L, Langley J, Voaklander D, Sim M, Wolf R, Dosman J, Hagel L, Ozanne-Smith J.** Minimizing bias in a case-control study of farm injury. *Journal of Agricultural Safety and Health*, 2005, 11(2): 175-184.

**Dahl WJ, Lockert EA, Cammer AL, Whiting SJ.** Effects of flax fiber on laxation and glycemic response in healthy volunteers. *Journal of Medicinal Foods*, 2005, 8(4): 508-511.

**Forbes D, Peacock S, Morgan D.** Nonpharmacological management of agitated behaviours associated with dementia. *Geriatrics & Aging*, 2005, 8(4), 26-30.

**Forbes D, Jansen S, Duncan V, Morgan D.** Melatonin for cognitive impairment (Protocol). *The Cochrane Database of Systematic Reviews*, 2005, Issue 2. Oxford: Update Software.

**Hagel L, McDuffie HH, Dosman JA, Lockinger L, Bidwell J, Siever S.** "The Agricultural Health and Safety Network. In: CIHR Institute of Population and Public Health. Moving Population and Public Health Knowledge into Action: A Casebook of Knowledge Stories, Ottawa 2006; 61-64.

**Jansen S, Forbes D, Duncan V, Morgan D.** Melatonin for cognitive impairment. *The Cochrane Database of Systematic Reviews*, 2006, Issue 1, Art. No. CD003802. LOI: 10.1002/14651858.CD003802.pub3.

**Lawson JA, Rennie DC, Senthilselvan A, Cockcroft DW, McDuffie HH.** Regional variations in risk factors for asthma in schoolchildren living in two communities. *Canadian Respiratory Journal*, 2005, 12 (6):321-326

**Letarte M, McDonald M, Li M, Kathirkamathamby K, Vera S, Pece-Barbara N, Kumar S.** Reduced endothelial secretion and plasma levels of TGF- $\beta_1$  in Hemorrhagic patients with Hereditary Telangiectasia type 1. *Cardiovascular Research*. Epub May 19, 2005.

**Letarte M, McDonald M, Li M, Kathirkamathamby K, Vera S, Pece-Barbara N, Kumar S.** Reduced endothelial secretion and plasma levels of TGF- $\beta_1$  in hemorrhagic patients with hereditary telangiectasia type 1. *Cardiovascular Research*. Epub May 19, 2005.

**McBain L, Morgan D.** Telehealth, geography, and jurisdiction: Issues of health care delivery in northern Saskatchewan. *Canadian Woman Studies*, 2006, 24(4), 123-129.

**McDuffie HH.** Host Factors and Genetic Susceptibility: A Paradigm of the conundrum of pesticide exposure and cancer associations. *Reviews Environmental Health*, 2005; 20(2):77-100.

**McDuffie HH, Pahwa P, Robson D, Dosman JA, Fincham S, Spinelli JJ, McLaughlin JR.** Insect repellents, phenoxyherbicide exposure, and Non-Hodgkin's Lymphoma. *Journal of Occupational and Environmental Medicine*, 2005; 47(12):806-816.

**Morgan D, Stewart N, D'Arcy C, Cammer A.** Creating and sustaining dementia Special Care Units in rural nursing homes: The critical role of nursing leadership. *Canadian Journal of Nursing Leadership*, 2005, 18(2), 74-98.

**Morgan D, Stewart, N, D'Arcy C, Forbes D, Lawson J.** Work stress and physical assault of nursing aides in rural homes with and without dementia special care units. *Journal of Psychiatric & Mental Health Nursing*, 2005, 12, 347-358.

**Olfert S, Pahwa P, Dosman JA.** Longitudinal analysis of pulmonary dysfunction in the initial years of employment in the grain industry. *Journal of Agricultural Safety and Health*, 2005, 11(4): 415-422.

**Pahwa P, McDuffie HH, Dosman JA, McLaughlin JR, Spinelli JJ, Robson D.** Hodgkins Lymphoma, Multiple Myeloma, and Soft Tissue Sarcoma: Insect Repellents and Phenoxyherbicides. *Journal of Occupational and Environmental Medicine*, 2006, 48(3):275-282.

**Rennie DC, Chen Y, Lawson J, Dosman J.** Differential effect of damp housing on respiratory health in women. *Journal of the American Medical Women's Association*, 2005; 60(1): 46-51.

**Sagan M, Hadjistavropoulos HD, Biem HJ.** The cost of developing and implementing a pathway for congestive heart failure: Not an inexpensive journey. *Healthcare Management Forum*, 2005, 18(3):44-48.

**Selvakumar P, Lakshmikuttyamma A, Charavaryamath C, Singh B, Tucheck J, Sharma RK.** Expression of myristoyltransferase and its interacting proteins in epilepsy. *Biochem Biophys Res Commun*, 2005, 335 (4):1132-9.

**Senthilselvan A, Lawson JA, Rennie DC, Dosman JA.** Regular use of corticosteroids and low use of short-acting  $\beta_2$ -agonists can reduce asthma hospitalization. *Chest*, 2005; 127:1242-51.

## Chapters and Articles in Books:

**Wetterneck TB, Biem HJ, Auerbach AD.** Quality improvement and patient safety in perioperative care. In: *Just the Facts in Perioperative Medicine* (eds) Cohn SL, Smetana GW, Weed H. McGraw-Hill.

**Dosman JA, Koehncke N, Rennie DC, Biem HJ.** Guest Editors, Special Edition of the *Journal of Agricultural Safety and Health* Vol 11(2) May 2005.

**Dosman JA, Brown Y., Rennie D, Olenchock S, Williams C, Barber E, Koehncke N, Kirychuk S, de Freitas S.** The Fifth International Symposium Future of Rural Peoples: Rural Economy, Healthy People, Environment, Rural Communities. Foreword In: Special Edition of the *Journal of Agricultural Safety and Health*, Vol 11(2) May 2005.

## Technical Reports Relevant to Academic Field:

Hogan D, Bailey P, Carswell A, Clarke B, Cohen C, Forbes D, Hing M, Lanctôt K, Morgan D, Thorpe L. Management of mild to moderate Alzheimer's Disease and dementia. Report submitted to the Third Canadian Consensus Conference on Diagnosis and Treatment of Dementia, Montreal, 2006.

## Conference Proceedings and Abstracts

Andrews M, D'Arcy C, Penz K, Morgan D, Stewart N. Male nurses in rural and remote Canada. **Presented:** Bridging the Distance: 6th Conference of the Canadian Rural Health Research Society, Quebec City, October 27-29, 2005.

Andrews M, Stewart N, D'Arcy C, Morgan, D. Examining stress leave in rural and remote Canadian RNs. **Presented:** Bridging the Distance: 6th Conference of the Canadian Rural Health Research Society, Quebec City, October 27-29, 2005.

Biem J, Morgan D, Crossley M, D'Arcy C, Forbes D, Kirk D, McBain L, Stewart N, Cammer A. Evaluation of a telehealth-supported multidisciplinary memory clinic: Trading off validity, generalizability, and feasibility in health services research. **Presented:** Canadian Association on Gerontology 34th Annual Scientific & Education Meeting, Halifax, NS, October 20-23, 2005.

Cammer A, Morgan D. Formative and process evaluation interviews for a multidisciplinary rural and remote memory clinic. **Presented:** Canadian Association on Gerontology 34th Annual Scientific & Education Meeting, Halifax, NS, October 20-23, 2005.

Cammer A, Morgan D, Janzen B. Methodological challenges and decisions in examining dementia care access issues for seniors in Northern Saskatchewan. **Presented:** Bridging the Distance: 6th Conference of the Canadian Rural Health Research Society, Quebec City, October 27-29, 2005.

Cammer, A. Examining dementia care access issues for older adults in Northern Saskatchewan. **Presented:** Life Sciences Research Conference, March 2006, Saskatoon, SK.

Cammer A, Morgan D, Janzen B. Issues surrounding utilization of dementia care services in Northern Saskatchewan. **Presented:** The Voices Continue to Speak: CIHR-IAPH Conference, Regina, SK. August 2005.

Cammer A, Dugleby W, Wright K, Williams A, Degner L, Holtslander, L. Strategies to foster hope: A pilot study of caregivers living with terminally ill cancer patients. **Presented:** Cancer Research across the Spectrum: National Cancer Institute of Canada and CIHR, Mont Tremblant, QC. May 2005

Chen Y, Rennie D, Cormier Y, Dosman JA. Sex specificity of asthma associated with objectively measured body mass index and waist circumference: the Humboldt Study. **Presented:** 2005 American Thoracic Society International Conference, San Diego, CA, May 20-25, 2005. American Thoracic Society, 2, A849, 2005

Chénard L, Grover VK, Senthilselvan A, Delmaire N, Kirychuk SP, Barber EM, Rhodes CS, Halliday SL, Dosman JA. 2005. Effect of work cessation on lung function in exposed swine farmers: results of a fourteen-year follow-up. **Presented:** International Conference of the American Thoracic Society, San Diego, CA, Vol. 2: A818, 2005.

Chenard L, Senthilselvan A, Dosman JA, Grover VK, Krychuk S, Lawson J, Barber E, Rhodes C, Hurst TS. Baseline lung function predicts healthy worker survival in swine farmers in a 13 year follow-up. **Presented:** Sixth Conference of the Canadian Rural Health Research Society & the First Conference of the Canadian Society for Circumpolar Health, October 27-29, 2005; Quebec City, QC.

Crossley M, D'Arcy C, Morgan D, Kirk A, Forbes D, Stewart N, Biem J, Harder S, Basran J, Dal Bello-Haas V, Holfeld L. NET reflections: What have we learned and where will it take us? **Presented:** Canadian Association on Gerontology 34th Annual Scientific & Education Meeting, Halifax, NS, October 20-23, 2005.

Dugleby W, Williams A, Wright K, Degner L, Cammer A, Holtslander L. Living with hope: Daily challenges of family caregivers and ways to foster their hope. **Presented:** Canadian Association on Gerontology 34th Annual Scientific Meeting, Halifax, NS, October 2005.

Dugleby W, Williams A, Wright K, Degner L, Cammer A, Holtslander L. Pilot study results of a psychosocial supportive "Living with Hope" intervention for family caregivers. **Presented:** Canadian Association on Gerontology 34th Annual Scientific Meeting, Halifax, NS, October 2005.

Farthing P, Rennie D, Chen Y, Dosman JA. The relationship between farming activities and asthma and allergy in children: The Humboldt Study 1993. **Presented:** Canadian Center for Health and Safety in Agriculture (CCHSA) conference, Quebec City, QC, October 27-29, 2005 and **Presented:** 13th Annual Life and Health Science Student Research Conference, University of Saskatchewan, Saskatoon, SK, March 17, 2005.

Feddes J, Chénard L. H<sub>2</sub>S in swine confinement facilities: A funding proposal to find methods to reduce the risk to life and health to workers and animals. **Presented:** CCHSA Workshop, Sixth Conference of the Canadian Rural Health Research, Quebec City, PQ. Abstract 1019 p. 7. October 27-29, 2005.

Forbes D, Peacock S, Morgan, D. Non-pharmacological strategies for managing agitated behaviors associated with dementia: A systematic review. **Presented:** The 58th Annual Scientific Meeting of the Gerontological Society of America, Orlando, Nov. 18-22, 2005, and **Presented:** 18th Annual Research Conference, Unit in Nursing, Diversity in Research, University of Western Ontario, London, ON. May 6, 2005.

Forbes D, Morgan D, Janzen B, Biem J, Peacock S, Adamson J, Peltier N. Older Canadians with dementia: Use of health services. **Presented:** Alzheimer Society of Canada 27th National Conference, Regina, SK. April 7-9, 2005.

Ghosh S, Pahwa P, Rennie DC. Increase of physician diagnosed asthma prevalence in a female Canadian Population: The National Population Health Survey Study 1994-2001. **Presented:** Canadian Society for Epidemiology and Biostatistics (CSEB), Toronto, June 27-30, 2005.

Ghosh S, Pahwa P. Asthma Prevalence and its relationship with age, sex, and location: A national population health survey study: 1994-2001. **Presented:** 33rd Annual Meeting of Statistical Society of Canada at University of Saskatchewan on June 12- 15, 2005.

Ghosh S, Pahwa P, Rennie DC, Dosman JA. Assessment of measurement bias associated with different pulmonary function equipment used in the Humboldt studies 1977-1993. **Presented:** American Thoracic Society (ATS), San Diego, May 19-25, 2005.

Hagel L, Dosman JA, Voaklander D, Senthilselvan A, McDuffie HH, Day L, Pahwa P, Redekop T, Harrell A, Crowe T, Ingram M, Wasserman J, Belton K, Halliday S. Case-Control Study of Farm Machinery Injuries, Prairie Region of Canada. **Presented:** Canadian Centre for Health and Safety in Agriculture (CCHSA) 2nd Annual Scientific Research Network Meeting and Rural & Northern Health Research - Bridging the Distance, Quebec City, QC, October 2005.

Harder S, Dal Bello-Haas V, Morgan D, McBain L, Crossley M, D'Arcy C, Stewart N, Forbes D, Kirk A, Biem J. NET effects: An explosion of successful collaboration. **Presented:** Canadian Association on Gerontology 34th Annual Scientific & Education Meeting, Halifax, NS, October 20-23, 2005.

Kirk D, Crossley M, Morgan D, D'Arcy C, Biem J, Forbes D, Stewart N. Mini-Mental State Examination scores are significantly lower when administered via telehealth (videoconferencing) than when administered in person to patients with early dementia. **Presented:** World Congress of Neurology, Sydney, Australia, Nov 5 - 11, *Journal of the Neurological Sciences*, 2005, 238, S291-S292. 2005.



- Kirk A, Crossley M, Harder S, Basran J, Dal Bello-Haas V, Morgan D, Stewart N, D'Arcy C, Biem J, Forbes D, Holfeld L. Design of a rural and remote memory clinic using telehealth technology. **Presented:** Canadian Association on Gerontology 34th Annual Scientific & Education Meeting, Halifax, NS, October 20-23, 2005.
- Kiryuchuk S, Koehncke N, Reynolds SJ, Nakatsu J, Mehaffy J. Particle bounce and endotoxin levels in a maple cascade sampler with PVC Filters. **Presented:** American Industrial Hygiene Association Conference, Anaheim, California, May 21-26, 2005.
- Kiryuchuk S, Koehncke N, Dosman J, Reynolds SJ. Respiratory outcomes of workers from cage based and floor based poultry operations. **Presented:** Young Investigators Conference in Circulatory and Respiratory Health, Winnipeg, Manitoba, April 28- May 1, 2005. CRJ 12 (3): p.169, April 2005.
- Lanting S, Cammer A, Crossley M, Morgan D, Dufour L. Partnering with an Aboriginal Grandmother's group to develop culturally relevant assessment protocols for a Rural and Remote Memory Clinic. **Presented:** Canadian Association on Gerontology 34th Annual Scientific & Education Meeting, Halifax, NS, October 20-23, 2005 and Bridging the Distance: 6th Conference of the Canadian Rural Health Research Society, Quebec City, October 27-29, 2005.
- Lanting S, Crossley M, Dufour L, McBain L, Morgan D. Partnering with aboriginal seniors to develop a culturally appropriate assessment protocol for cognitive impairment and dementia in a rural and remote memory clinic. **Presented:** Alzheimer Society of Canada 27th National Conference, Regina, SK. April 7-9, 2005.
- Lawson JA, Rennie DC, Senthilselvan A, McDuffie HH, Cockcroft DW. A comparison of asthma risk factors in schoolchildren between 2000 and 2003. **Presented:** 2005 American thoracic Society International Conference, San Diego, CA, May 20-25, 2005. American Journal of Respiratory and Critical Care Medicine, Volume 2 abstracts issue A698.
- Lawson JA, Rennie DC, Senthilselvan A. Predictors of current wheeze in children involved in a three year follow-up study. **Presented:** National Research Forum for Young Investigators in Circulatory and Respiratory Health April 28 - May 1, 2005. Canadian Respiratory Journal, 12: 166.
- Lawson J, Rennie DC, Senthilselvan A, Cockcroft DW, McDuffie HH. Risk factors for asthma in schoolchildren involved in repeated surveys, 2000 and 2003. **Presented:** Sixth Conference of the Canadian Rural Health Research Society & the First Conference of the Canadian Society for Circumpolar Health, October 27-29, 2005; Quebec City, QC.
- Lawson JA, Frangou E, Kanthan R. A comparison of five markers of angiogenesis in male breast cancer. **Presented:** Cancer research across the spectrum. National meeting of trainees – sponsored by the CIHR Institute of Cancer Research and National Cancer Institute of Canada. Mont Tremblant, Quebec, May 9-11, 2005.
- Lawson JA, Rennie DC, Senthilselvan A. Predictors of wheeze onset in children involved in a three year follow-up study. **Presented:** Department of Public Health Sciences Research Day, Edmonton AB, April 28, 2005
- Lejbak L, Crossley M, Morgan D. Review of the most recent clinical guidelines for diagnosing the major dementias. **Presented:** Alzheimer Society of Canada 27th National Conference, Regina, SK. April 7-9, 2005.
- McBain L, Morgan D, Crossley M., Forbes, D., Stewart, N., & Biem, J. Accessing telehealth services: Recognizing the challenges facing older adults in northern and remote communities. **Presented:** Canadian Association on Gerontology 34th Annual Scientific & Education Meeting, Halifax, NS, Oct 20-23, 2005.
- McDonald M, Rennie D, Bharadwaj L, Speer L and Dosman J. Genetic epidemiology of atopy and variants in TLR4 and CD14 in a rural population. **Presented:** Rural and Northern Health Research: Bridging the Distance conference in Quebec City, PQ, October 28, 2005.
- McDuffie HH, Nakagawa K, Pahwa P, Nakada N, Shindo J, Hashimoto M, Ghosh S, Hucl P. Occupational exposure to pubescent canary seed and pulmonary function. **Presented:** Rural & Northern Health Research – Bridging the Distance, Quebec City, PQ, October 2005.
- McDuffie HH, Pahwa P, Grover VC. Pulmonary function and risk of cancer: An inverse relationship? **Presented:** 2005 Annual Meeting of American Association for Cancer Research, April 18, 2005, Anaheim, CA, USA.
- McDuffie HH, Nakagawa K, Pahwa P, Shindo J, Hashimoto M, Nakada N, Ghosh S, Kiryuchuk SP, Hucl P. Cigarette smoking, tumour necrosis factor alpha polymorphism and pulmonary function in Saskatchewan male grainhandlers. **Presented:** Canadian Association for Research on Work and Health, May 16-17, Vancouver, BC, 2005.
- McGuigan C, Ovsenek N, Bharadwaj L. Nitrate levels and distribution in Saskatchewan drinking water. **Presented:** Life and Health Sciences Graduate Student Conference, University of Saskatchewan, Saskatoon, SK, March 2006.
- McGuigan C, Ovsenek N, Bharadwaj L. Nitrates, gene expression, and cytotoxicity in human cell lines. **Presented:** Sixth Conference of the Canadian Rural Health Research Society & the First Conference of the Canadian Society for Circumpolar Health, Québec City, QC. October 2005.
- McGuigan C, Ovsenek N, Bharadwaj L. Nitrate levels and distribution in Saskatchewan drinking water. **Presented:** Sixth Conference of the Canadian Rural Health Research Society & the First Conference of the Canadian Society for Circumpolar Health, Québec City, QC. October 2005.
- Morgan D, Crossley M, Kirk A, D'Arcy C, Stewart N, Forbes D, Biem J, Holfeld L, Cammer A. Development and evaluation of a multidisciplinary rural and remote memory clinic with pre- and post-assessment via telehealth. **Presented:** The 58th Annual Scientific Meeting of the Gerontological Society of America, Orlando, Nov. 18-22, 2005.
- Morgan D, Stewart N, D'Arcy C, Biem J, Crossley M, Forbes, D, Kirk A, Cammer A, Vickers, D. Dementia care practices and information needs of rural physician and non-physician community-based care providers. **Presented:** The 58th Annual Scientific Meeting of the Gerontological Society of America, Orlando, Nov. 18-22, 2005.
- Morgan D, Stewart N, Crossley M, D'Arcy C, Biem J, Kirk A, Forbes D. From conception to birth: Development of the team and NET research projects. **Presented:** Canadian Association on Gerontology 34th Annual Scientific & Education Meeting, Halifax, NS, October 20-23, 2005.
- Morgan D, Stewart N, D'Arcy C, Basran J, Biem J, Crossley M, Forbes D, Kirk A. Care of rural seniors with dementia: Continuing education needs of physician and non-physician community-based health care providers. **Presented:** Alzheimer Society of Canada 27th National Conference, Regina, SK. April 7-9, 2005.
- Morgan D, Biem J, Crossley M, D'Arcy C, Forbes D, Kirk A, Stewart N, McBain L, Basran J, Harder S. "Strategies to improve the care of persons with dementia in rural and remote areas": CIHR New Emerging Team Research Program. **Presented:** Alzheimer Society of Canada 27th National Conference, Regina, SK. April 7-9, 2005.
- Pahwa P, McDuffie HH, Dosman JA. Modelling the longitudinal changes in prevalence of respiratory symptoms among Canadian grain elevator workers. **Presented:** Rural & Northern Health Research – Bridging the Distance, Quebec City, PQ, October 2005.
- Pahwa P, McDuffie HH, Vickers D, Dosman JA, Spinelli JJ, McLaughlin JR. Multiple Myeloma (MM) and pesticide exposure: Regional differences based on Canadian Case-control Study of Pesticides and Health. **Presented:** Canadian Association for Research on Work and Health, May 16-17, Vancouver, BC, 2005.
- Pahwa P, Ghosh S, McDuffie HH, Halliday S. Health-related quality of life in grain workers with respiratory symptoms and/or chronic obstructive pulmonary diseases (COPD). **Presented:** Canadian Association for Research on Work and Health, May 16-17, Vancouver, BC, 2005.
- Poock J, Funk M, Corney P, Crossley M, Basran J, Morgan D. Assessing gait and dual-task performance in patients referred to a memory clinic. **Presented:** Alzheimer Society of Canada 27th National Conference, Regina, SK. April 7-9, 2005.

Rennie D, Lawson J, Dosman JA. Is the proximity from home to outbuildings or hay bales associated with asthma, wheeze or allergy in farm children. **Presented:** Sixth Conference of the Canadian Rural Health Research Society & the First Conference of the Canadian Society for Circumpolar Health, October 27-29, 2005; Quebec City, QC.

Rennie D, Dosman J, Schwartz D, Grover VK, McDuffie H, Burch L, Pahwa P, Bharadwaj L, Chen Y. Increased wheeze is associated with Toll-like 4 receptor (TLR4) 299 and 399 polymorphism in women and not in men. **Presented:** Rural & Northern Health Research – Bridging the Distance, Quebec City, PQ, October 2005.

Rennie DC, Nakagawa K, McDuffie HH, Bharadwaj L, Dosman JA. The relationship between Toll-like receptor 4 (TLR) A-896G, CD14C-159T and G-1359T polymorphisms and respiratory symptoms in a population based study of school-age children. **Presented:** American Thoracic Society, San Diego, 2005.

Semchuk KM, Rosenberg AM, McDuffie HH, Senthilselvan A, Cessna AJ, Irvine DG. Antinuclear antibody detection and bromoxynil exposure in a sample of rural men and women during spring herbicide application. **Presented:** Society Epidemiological Research-Can Soc Epidem Biostatistics, Toronto, ON, June 2005.

Semchuk KM, Rosenberg AM, McDuffie HH, Senthilselvan A, Cessna AJ, Irvine DG. Bromoxynil exposure and detection of antinuclear antibodies in a sample of rural men and women during spring herbicide application. **Presented:** Canadian Association for Research on Work and Health, May 16-17, Vancouver, BC, 2005.

## Invited Presentations

**Stewart N, Cammer A, Morgan D, McBain L, Biem J, Crossley M, D'Arcy C, Forbes D, Kirk A.** Strategies to improve the care of persons with dementia in rural and remote Saskatchewan: New Emerging Team update. Poly-Partite Meeting, Prince Albert, SK, November 2004.

**Morgan D.** Strategies to improve the care of persons with dementia in rural and remote Areas: CIHR New Emerging Team Projects. CIHR Institute of Aging Regional Seniors' Workshop on Research, Regina, SK, June 25, 2004.

**Koehncke N.** "Doctor, Am I ready to return to work?" Prince Albert family physicians, Prince Albert, SK, November 9, 2004.

**Koehncke N.** Needle Safety Devices. Saskatchewan Association of Healthcare Organizations Annual Conference, Delta Bessborough Saskatoon – June 3, 2005

**Pahwa P.** Philosophy of Yoga, Yoga Poses – Professional Educational Association of Non-teachers of Saskatchewan, October. 2005.

## Research Grants Received

**Dosman JA, Stus DM., Worobec, D.** CCHSA Newsletter entitled "Agricultural Health and Injury Prevention: Research and Control". Canadian Agricultural Safety Association (CASA).

**Dosman JA, McDuffie HH, LaBrash L, Ulmer K.** Organize and Implement a Provincial Workshop: Sleepless in Saskatchewan. Canadian Agricultural Safety Association (CASA). September 2005 – March 2006.

**Dosman JA, McDuffie HH, LaBrash L, Ulmer K.** OffGuard Photographic Exhibition and Catalogue. Canadian Agricultural Safety Association (CASA). September 2005 – March 2006.

**Dosman JA, McDuffie HH, Ulmer K, LaBrash L.** Customize and Translate the IAREH/CASA Publication "Rural Stress Toolbook" for Provincial Collaborators in All Ten Province. Canadian Agricultural Safety Association (CASA).

**Feddes J, Predicala B, Lague C, Edeogu I, Smith R, Chenard L, Lemay S, Hodgkinson D, Wenger OI, Qu G, Guo H.** Hydrogen Sulphide in Swine Confinement Facilities: Finding Solutions to Reduce Exposure to Workers and Animals. Funded by: Canadian Centre for Health and Safety in Agriculture.

**Forbes D, Anderson M, Hawranik P, Henderson S, Liepert B, Morgan, D, Markle-Reid M, Parent K.** Role of Home Care in Dementia Care. Funded by: Alzheimer Society of Canada, Canadian Nurses Foundation, Nursing Care Partnership of the Canadian Health Services Research Foundation, CIHR Institute of Aging, CIHR Institute of Gender and Health.

**Goodridge, D, Duggleby W, Gjevre J, Rennie D.** The Quality of Dying of COPD Patients in the ICU: Perspectives of Practitioners. Canadian Respiratory Nurse's Society, Canadian Lung Association. 2005.

**Goodridge D, Duggleby W, Rennie D, Marciniuk D.** Quality of End-of-Life Care: The Perspectives of Bereaved Family Members of Lung Cancer and COPD Patients, Health Care Providers and Policy Makers in Rural and Urban Areas. Saskatchewan Health Research Foundation, 2005.

**McDuffie HH, Dosman JA, Ulmer K, LaBrash L.** Saskatchewan Farm Safety Radio Messages. Canadian Agricultural Safety Association (CASA). September 2005 – March 2006.

**Pahwa P.** Investigation of Association Between Non-malignant Respiratory Diseases and Cancer Based on the Longitudinal Analysis of National and Provincial Databases. Canadian Centre for Health and Safety in Agriculture Pilot Project Program. Awarded February 2005.

**Pahwa P.** (1) Non-malignant Respiratory Disease and Cancer. (2) Association Between Exposure to Pesticides and (i) Respiratory Diseases, (ii) Rheumatoid Arthritis, Cancer, Pesticides Farming. Canadian Centre for Health and Safety in Agriculture Junior Faculty Release Time Program. Awarded May 2005.

**Pickett W, Dosman, J, Brison R, Marlenga B, Day L, Biem HJ, Hagel L, Crowe T, Pahwa P.** Saskatchewan Farm Injury Cohort Study. Funded by: Canadian Institutes of Health Research (CIHR).

## Continuing Research Grants

**Chilibeck P, Whiting S, Biem J, Case A, Pierson R, Olatunbosun O, Pahwa P.** Effect of Combined exercise Therapy and Phytoestrogen Supplementation on Prevention of Osteoporosis. Funded by: Canadian Institutes of Health Research, March 2004 – 2009.

**Dosman JA, Babiuk LA, Cormier Y, Brison R., Pickett W, Kennedy SM, Gagnon GA.** Canadian Centre for Health and Safety in Agriculture (CCHSA). Funded by: Canadian Institutes of Health Research, Centres for Research Development. 2003 – 2009. Also supported by the Institut de recherche Robert-Sauvé en santé et en sécurité du travail (IRSST).

**Dosman J.A., Babiuk, L., Barber E., Brison R., Cormier Y., Guernsey J., Kennedy S.M., Pickett W.** National Training Program, "Public Health and the Agricultural Rural Ecosystem (PHARE)". Funded by: Canadian Institutes of Health Research. 2002 – 2007.

**Dosman JA, Chen Y, Juurlink B, Pahwa P, Senthilselvan A, Babiuk L, Laprise C, Cormier Y, Rennie D, Rosenberg A, McDuffie HH, Swartz D, Speer M.** Exposure to Endotoxin and Lung Function. Funded by: Canadian Institutes of Health Research.

**Dosman JA, Cormier Y, Koehncke N, Senthilselvan A, Feddes J, Classen H, Duchaine C, Guenter W, Hurst T, Wilson P.** Effect of Indoor Air Quality and Production Practices on Respiratory Health in Exposed Poultry Workers in Canada. Funded by: Canadian Institutes for Health Research.

**Katamayzk P, Reeder B, Elliot S, Raine K, Joffres M, McLean D, Pahwa P.** Understanding the Individual and Socio-Environmental Health Risks of Obesity: The Canadian Heart Health Surveys Follow-up Study. CIHR, 2004 – 2009.

**Morgan D, Stewart N, Crossley M, D'Arcy C, Biem J, Kirk A.** CIHR New Emerging Team Proposal "Strategies to Improve the Care of Persons with Dementia in Rural and Remote Areas. Funded by: Canadian Institutes of Health Research and partners (Saskatchewan Health Research Foundation, University of Saskatchewan, Alzheimer Society of Saskatchewan).

**Morgan D, Stewart N, Crossley M, D'Arcy C, Forbes D.** Physically Aggressive Behavior Toward Nursing Home Staff in Dementia Special Care Units and Integrated Facilities: An Attributional Analysis. Funded by: Health Services Utilization and Research Commission Establishment Grant.

**Harder S, Morgan D, Crossley M, Biem J, Kirk A.** Magnetic Resonance Spectroscopy in Diagnosis and Prognosis of Mild Cognitive Impairment and Alzheimer's Disease. Funded by: Saskatchewan Health Research Foundation, Establishment Grant.

**Pahwa P, Kirychuk S, McDuffie HH, Dosman JA, Senthilselvan A.** Decline in Health-related Quality of Life in Grain Handlers with Chronic Obstructive Pulmonary Disease Over Time. Funded by: Saskatchewan Health Research Foundation (SHRF).

## Awards

### Faculty and Staff

On November 8th, 2005, Dr. James A. Dosman received Saskatchewan's highest honour The Order of Merit. The Order of Merit recognizes individuals who have contributed significantly to the well-being of the province and its residents.



*Dr. James and Mrs. Sue Dosman*

Dr. James A. Dosman was one of the recipients of the 2005 Saskatchewan Health Research Foundation Achievement Awards presented during Health Research Week, November 27th to December 3rd, 2005, which celebrates health research successes in Saskatchewan by recognizing major achievements by individual researchers.



*(l to r) Dr. Jim Dosman, Hon. John Nilson Minister of Saskatchewan Health, Dr. Lorne Babiuk, and Dr. Jim Thornhill accepting the award on behalf of Dr. Jay Kalra.*

**Dr. James A. Dosman:** Dr. Dosman was awarded the honorary title of Professor Emeritus.

**Dr. Helen H. McDuffie:** Dr. McDuffie was awarded the honorary title of Professor Emerita.

**Dr. Donna Rennie:** Dr. Rennie was awarded a sabbatical leave. She will be working in Uppsala, Sweden and Ottawa, Canada during her sabbatical.

**Mrs. Ruth Day:** The President's Advisory Council on the Status of Women which recognizes, values, and rewards the contributions of women will honor Mrs. Ruth Day in the University of Saskatchewan's Centennial Calendar. Mrs. Day retired from her Executive Secretary position at I.ARE.H in 1999.

### Students

**Allison Cammer:** Received first place in the Social, Cultural, Environmental and Population Health Research category for her poster presentation at The 13th Annual Life and Health Sciences Graduate Student Research Conference.

**Allison Cammer:** Received the Northern Scientific Training Program Travel Grant from the Department of Indian Affairs and Northern Development, Government of Canada, April 2005.

**Allison Cammer:** Indigenous People's Health Research Graduate Scholarship, CIHR Supported Training Program, Indigenous People's Health Research Center, University of Saskatchewan, September 2005

**Chandrashekhar Charavaryamath:** Received a travel award in December 2005, from Immunology Research Group, University of Saskatchewan to present at the Canadian Society for Immunology meeting to be held in Halifax, NS in June 2006.

**Josh Lawson:** Alumni research award for doctoral students. Department of Public Health Sciences, University of Alberta, April 2005.

**Josh Lawson:** Best student oral presentation at research day. Department of Public Health Sciences Research Day, University of Alberta, April 2005.

**Merry-Lynn McDonald:** CIHR Institute of Genetics Short-term Research Visit Grant which allowed Merry-Lynn to spend the summer of 2005 working with Dr. Peter Pare, Dr. Denise Daly and Dr. Andrew Sandford at the University of British Columbia gaining experience analyzing genetic and environmental data from the group's cohort of children from families that are at high-risk of developing asthma.

**Merry-Lynn McDonald:** Received a travel award from I.ARE.H to go to Germany. Topics for this class included sibpair analysis (quantitative and qualitative traits); non-parametric methods for analyzing extended family pedigree data; haplotype construction; association studies (case-control and family based); and sample size estimations. Knowledge of linkage analysis/statistical genetics were screening criteria for selection of participants.

**Pamela Farthing:** Received an award in April 2005 for a one year period July 2005-June 2006 from the Canadian Nurses' Respiratory Society (Canadian Lung Association).

**Pamela Farthing:** Received second place in the Cardiovascular/Respiratory Sciences category for her poster presentation at The 13th Annual Life and Health Sciences Student Research Conference.

## Visiting Scholars

**Takayuki Seo** was conferred the degree of Master of Pharmaceutical Sciences from the Division of Pharmacology and Therapeutics, Graduate School of Medical & Pharmaceutical Science, Kumamoto University, Japan. He will be spending 11 months at I.ARE.H. His project title is "Cross-sectional and Longitudinal Effects of Multiple Gene Polymorphisms on Pulmonary Function in Grainhandlers.



Shuji Goto

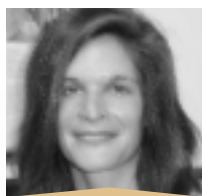
**Dr. Anna Rask-Andersen**, from Uppsala, Sweden spent a few weeks at I.ARE.H analyzing data.



Shuji Goto

**Shuji Goto** from the Division of Pharmacology and Therapeutics, Graduate School of Medical & Pharmaceutical Science, Kumamoto University, Japan spent six months at I.ARE.H. His project title was Genetic Polymorphisms and Longitudinal Decline in Pulmonary Function". Shuji left for Kumamoto, Japan in October 2005 after spending six months at I.ARE.H. We will miss his smile!

## Bye, Bye



Dr. Lalita Bharadwaj

**Dr. Lalita Bharadwaj** assumed a tenure track faculty position in the College of Nursing at the University of Saskatchewan. Dr. Bharadwaj will continue to be associated with I.ARE.H through research projects, and PHARE. Many congratulations!



Julie Bidwell

**Julie Bidwell** retired from her position within The Rural Health Extension Program (RHEP) after spending a few years at the Institute. She left a legacy of good ideas and wonderful projects. We will miss your beautiful crafted garden in July during our staff BBQ.



Dr. Jay Biem

**Dr. Jay Biem** left the Institute to pursue different career goals. We wish him and his family all the best.

**Vaneeta Grover** left I.ARE.H in September 2005 to pursue a PhD at Dalhousie University. Best of luck!

**Dale Worobec** left the Institute to pursue different career goals. Best of luck to Dale!

(Annual Report compiled and edited by Sueli B. de Freitas)



**I·A·R·E·H**  
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