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Papers

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Humboldt Study. Int J Obes, 19:825-831, 1995.

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Congratulations

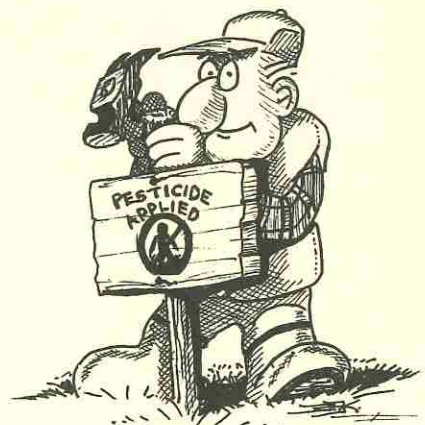


Manisha Raja is a medical student who has contributed immensely to research projects within the centre as a student research assistant. She recently completed all the requirements to obtain her BSc Med. Her thesis project is entitled "Water Contamination as a Risk Factor for non-Hodgkin's Lymphoma." She will present her research at the International Environmental Epidemiology Conference in Edmonton this summer.

Dr. Lue Ping Zhao was The Senator Norman M. Paterson Visiting Professor in October, 1995. Dr. Zhao is a biostatistician with the Biostatistics and Epidemiology Programs, Division of Public Health Sciences, Fred Hutchinson Cancer Research Center in Seattle, Washington. He is also an affiliated Associate Professor in the Departments of Biostatistics and Epidemiology, University of Washington. His current research activities focus on cancer genetic epidemiology including statistical methods and the etiology of colon, breast, prostate and lung cancers. He was the recipient of the First Independent Research Support and Transition Award from the National Cancer Institute in 1991.



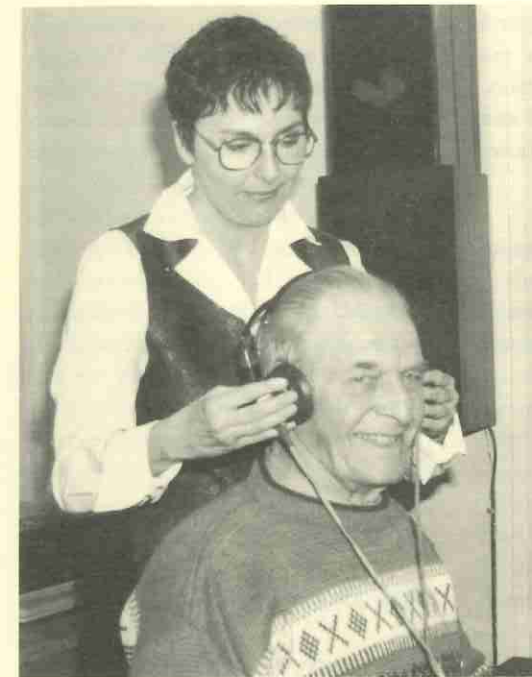
Dr. Patricia G. Butterfield was The Senator Norman M. Paterson Visiting Professor in March, 1996. Dr. Butterfield is Associate Professor, College of Nursing, Montana State University. Dr. Butterfield's work encompasses several areas of inquiry in occupational epidemiology and occupational and environmental health nursing. At the Centre for Research on Occupational and Environmental Toxicology, Oregon Health Sciences University, Dr. Butterfield participated in etiologic studies of young-onset Parkinson's disease and Alzheimer's disease. Her current research projects include: (1) examination of occupational exposures to migrant and seasonal farm workers in Montana, (2) providing epidemiologic support to the State Health Department on breast and cervical cancer in Montana women.



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AGMED NEWS '95 - '96

CENTRE FOR AGRICULTURAL MEDICINE, UNIVERSITY OF SASKATCHEWAN



Hearing Screening Underway: Clem Gorin of St. Brieux is one of the 40 North East Saskatchewan farmers and about 3,000 province-wide having his hearing screened as part of a joint Saskatchewan Health (Hearing Aid Plan) and the Agricultural Health and Safety Network information gathering project. Brenda Angelstad, audiologist, adjusts the earphones as she prepares to test Mr. Gorin's hearing in the speech frequency ranges. (Melfort Journal).

Message from the Chair

Our Agricultural Health and Safety Network reaches 21,000 farm families, the Prairie Ecosystem Study matures, and a Community Psychologist joins our Faculty.

While my Annual Report, on behalf of the Board of Directors, could stress any of the numerous items listed in this annual report, I would like to focus on four highlights that have occurred over the last year.

First, the Agricultural Health and Safety Network, a co-operative arrangement among the Saskatchewan Association of Rural Municipalities (SARM), individual participating Municipalities, the Centre for Agricultural Medicine, and individual farm families, has continued to thrive and grow. There are increases both in numbers

of farm families and Municipalities involved, and in the nature, complexity, and excitement of our programming. During this year, 91 of 298 Rural Municipalities brought the outreach and prevention program of the Centre to their practicing farm families by providing communications expenses through the Agricultural Health and Safety Network. By any measure, this direct involvement of 1/3 of Saskatchewan's 60,000 farm families is an outstanding achievement. Programming this year included a groundbreaking hearing conservation program developed by the staff of the Centre, and provided the opportunity for more than 3,000 individuals to access hearing tests. This development highlights an ever-expanding array of

occupational health and production support services to farmers, their families, and others in the agricultural industry.

Testing has begun in the Rural Municipalities of Victory No. 226, Lacadena No. 228 and Monet No. 257 and in the communities of Beechy, Elrose and Kyle for the Prairie Ecosystem Study (PECOS) of Environmental Pesticide Exposure and Human Health, which involves a number of the Centre Faculty, Staff and Graduate Students.

The "PECOS" project is notable because it involves support from the three medical and social granting councils of Canada (Medical Research Council, Social Science and Humanities Research Council, and the National Research Council) and combines research on the sustainability of the physical, social, and human health

components of the agricultural industry in rural communities. The Prairie Ecosystem and Health Study led by Centre Faculty is an innovative and complex assessment of the short-term effects of agricultural pesticides on the health of farming and nonfarming rural residents, which includes determination of pesticide exposure levels and tests of memory and attention, lung function, and the immune system.

This year has also seen an expansion in our Faculty. The five existing Faculty have been joined by Dr. Nikki Gerrard of Saskatoon District Health on a 50% basis. Dr. Gerrard led our Faculty and staff in submitting a Health Canada-sponsored proposal to establish a Canadian Centres of Excellence in Health Needs of Rural Women.

I have greatly appreciated new agreements signed with Saskatchewan Agriculture and Food, aimed at supporting our outreach, prevention, and agricultural technology support programming, and our continuing relationship with Saskatchewan Health in support of our human health research initiatives and public health issues.

My visits to the Centre are always exciting and rewarding, as I see the wonderful potential and productivity of Faculty, Pre-Doctoral Students, Post-Doctoral Fellows, and support staff, linking up with the farmers and persons of rural Saskatchewan in this important initiative.

Thank you to all!

Sincerely,
David Popkin, Dean, College of Medicine; Chair, Board of Directors, Centre for Agricultural Medicine.

Research

Swine Producers Longitudinal Study of Lung Function (National Health Research and Development Program [NHRDP]). This year saw the completion of a four-year study of lung function comparing hog producers, grain farmers and non-farmers. In 1989 to 1990, 250 pig farmers, 250 grain farmers, and 250 rural-dwelling men had breathing tests measured. Fifty barns were assessed for environmental contaminants both in the Spring and Summer. These studies were repeated in 1994 and 1995. The results demonstrate a reduction of approximately 36 cc in the breathing test values of forced expired volume in one second in the pig farmers as compared to the rural-dwelling nonfarming men.

Cross Canada Study of Pesticides and Health (Health Canada). This study is exploring potential relationships between agricultural and occupational pesticide exposure, smoking history, familial history of cancer, and four rare tumours.

Prairie Ecosystem Study (The Eco-Research Program: Tri-Council Secretariat of Canada, Medical Research Council, National Science and Engineering Research Council, Social Science and Humanities Research Council). A large group of investigators at the Universities of Saskatchewan and Regina received a grant to study the physical, economic, social, and health aspects of the land, society, and people in the Prairie Regions of Canada. The study is being conducted in "Region 3BN" in Southwestern Saskatchewan. The portion of the study involving human health focuses primarily on the effects of exposures to pesticides on human health, with regard to neurological, psychological, immunological, and respiratory systems. The research group includes A. Cessna, Agriculture Canada Research Branch; M. Crossley, Department of Psychology; J. Dosman, Centre for Agricultural Medicine; N. Gerrard, Centre for Agricultural Medicine; P. Hanke, Farmer, Beechy; D. Irvine, Toxicology Research Centre; R. Kerrich, Department of Geological Sciences; V. Laxdal, Department of Pathology; H.

McDuffie, Centre for Agricultural Medicine; J. Elliott, National Hydrology Research Institute; A. Rosenberg, Department of Pediatrics; A. Senthilselvan, Centre for Agricultural Medicine; K. Semchuk (Chair), Centre for Agricultural Medicine and College of Nursing; K. Arbuthnott, Centre for Agricultural Medicine, is a Postdoctoral Fellow. Three Master's students are involved; L. Hagel and M. Maisley, Department of Community Health and Epidemiology; and P. Macfarlane, Department of Psychology.

Pesticide Exposure and Lymphocyte Genetic Instability (Health Services Utilization and Research Commission). The purpose of this study is to compare a variety of genetic effects which are detectable in small blood samples between volunteers who are exposed and unexposed to pesticides while working. We are conducting this research with the following invited collaborators: Dr. Paul Pabello, Cytogenetics, University of Saskatchewan, Dr. Ilan Kirsch, National Cancer Institute, Bethesda, Maryland, Dr. G. Cortopassi, University of California at Davis, Dr. Atsushi Ueda and Dr. Kazuko Nakagawa, Kumamoto University School of Medicine, Kumamoto, Japan.

Control Technologies in Swine Confinement Buildings and Human Health (Inspiraplex). The project was an interdisciplinary project and included the University of Laval, The Prairie Swine Centre Inc., Agriculture and Bioresource Engineering, the Pulmonary Department of Royal University Hospital and The Western College of Veterinary Medicine. The study looked at the differing health effects experienced by human subjects, exposed in a traditional hog production barn and a hog production barn that used the environmental control of canola oil sprinkling. Volunteers new to a hog barn environment were asked to spend five hours in a swine barn room that used traditional dust control technology and compared their changes in lung function, blood tests, and nasal cell tests to those which occurred when five hours were spent in a swine barn room that used canola oil dust control technology. The canola oil dust control technology resulted in an approximate

90% reduction in dust levels and significantly reduced acute health effects experienced by the volunteers.

Humboldt Study of Lung Disease

The 1993 Humboldt Study of Lung Disease, funded by the Saskatchewan Health Services Utilization and Research Commission, was successfully completed in January, 1996. The study had three major components: based on longitudinal, cross-sectional and family study designs. Based on information from the cross-sectional and family data, four articles have been published or are in press. Papers and posters reporting results from the study have been presented at international conferences in Stockholm, New York and Seattle. As part of our commitment to the Humboldt community, we have presented information from the study findings to members of the community and local media.

Services

Grainworkers' Health Surveillance Program. The Centre continues to provide a Health Surveillance Program to Grainworkers across Saskatchewan. The program was managed by Shelley Kirychuk and conducted by Lori Lockinger and Lynn Dwernychuk. Volunteer attendance continues to be very high and there is increased interest in both respiratory health teaching and lifestyle health education.

Swine Producers Health Surveillance Program. A new program was formed for swine producers to offer them a health surveillance program similar to that offered to the grain industry. The program includes a health questionnaire, lung function, height, weight, body mass index, and blood pressure measurements. The program is augmented with education on respiratory hazards experienced by swine production workers. There is also a general health section which focuses on a particular health issue and offers the opportunity for health-related questions from the producer. The program is managed by Shelley Kirychuk.

Agricultural Health and Safety Network

Membership Drive: In conjunction with The Saskatchewan Association of Rural Municipalities' 90th Anniversary, a decision was made to increase the scope of the Network to a corresponding 90 member R.M.'s. Through the promotional efforts of Ms. Rose Yaworski and Dr. J. Dosman, the Agricultural Health and Safety Network expanded to a membership of 91 rural municipalities. Through the Network, agricultural health and safety information is distributed to more than 21,000 Saskatchewan farm families.



Lori Lockinger, R.N., B.S.N.



Connie Lupescu, R.N., B.S.N.

Staffing: Louise Hagel, former manager of the Network, has taken a leave of absence in order to pursue full-time Master's studies. Through her efforts, the programs and services of the Network have evolved to its current state. To keep up with the Network's growth, its management has been increased to two full-time staff: Lori Lockinger in Community Development, and Connie Lupescu in Resource Development and Program Evaluation. Ms. Lockinger had

previously been employed with the Centre for Agricultural Medicine in a number of temporary positions with the grainworkers' program and the Humboldt Lung Study. Ms. Lupescu has a background in community and occupational health nursing.

Hearing Conservation: During the past year, the focus of health promotion activities was a package developed at the Centre, entitled "Hearing Conservation for Farm Families." Individuals can receive a free hearing screening test and over 3000 accepted. Testing will take place in 1996-97 with the co-operation of Brenda Angelstad, Saskatchewan Hearing Aid Plan (SHAP).

Farm Response: An accident preparedness course for farm families was offered to Network members early in 1996. With the cooperation of Tim Hillier of M.D. Ambulance Care, Ltd., and the Saskatoon District Health Board, this course is being offered across Saskatchewan and is the first of its kind in Canada. Farm Response alerts rural residents and farm workers to the primary concerns and responsibilities of being first on the scene of a farm accident. Forty-five courses have been offered to numerous rural municipalities involving 590 participants.

Fact Sheets: In response to the infestation of wheat midge, Bertha armyworm, and Diamondback moth, a fact sheet was developed detailing safe pesticide handling information. The Fact Sheet was developed in co-operation with Saskatchewan Agriculture and Food, and Occupational Health and Safety, Department of Labour. The Fact Sheet was available in 1995 and was included with the Network News distributed to member families. As spraying season approaches, a pilot project is being promoted by the Network. Farmers will be supplied with disposable posting signs indicating that their field has recently been sprayed. Individuals will be encouraged to post fields that are along road allowances and those to which people from outside agencies, such as Sask Power, might require access. The respiratory program for farmers will be streamlined in the summer of 1996 with the goal of increasing its availability for member R.M.'s. Plans are being made to offer the program in the late Fall.

Invited Presentations

Chen Y. Environmental determinants and lung function in women. The First Annual Canadian Farm Conference, Charlottetown, P.E.I., October 27, 1995.

Semchuk KM. The role of pesticides and herbicides in Parkinson's disease. Invited Speaker, Workshop: "The Role of the Environment in Parkinson's Disease," National Institutes of Health (NIH), National Institute of Environmental Health Sciences (NIEHS), Research Triangle Park, North Carolina, U.S.A., September 17-19, 1995.

Contributed Papers in Published Conference Proceedings and Abstracts

Lockinger L, Hillier T, Hagel L, Chen Y, McDuffie H, Dosman J. Farm response - accident preparedness for farm families. Third Annual NIOSH Agricultural Health and Safety Conference, March 24-26, 1996, Iowa City, Iowa.

Senthilselvan A. Trends and regional variations in prevalence of asthma in Saskatchewan. 1995. International American Lung Association/American Thoracic Society Conference, Seattle, May 20-24, 1995.

Senthilselvan A, Pahwa P, Wang P, McDuffie HH, Dosman JA. Longitudinal changes in pulmonary function and respiratory symptoms in grain elevator workers. 1995. ATS International Conference, May 21-24, 1995, Seattle, Washington. Am J Resp and Crit Care Med 151:A140, 1995.

Senthilselvan A, Dosman JA, Kirychuk S, Barber E, Zhang Y, Rhodes C, Hurst T. Accelerated lung function decline in swine confinement workers. Third Annual NIOSH Agricultural Health and Safety Conference, March 24-26, 1996, Iowa City, Iowa.

Dosman JA, Senthilselvan A, Kirychuk S, Holfeld L, Cormier Y, Zhang Y, Barber E, Rhodes C, Hurst T. Human health effects of an environmental intervention in a swine confinement building. Third Annual NIOSH Agricultural Health and Safety Conference, March 24-26, 1996, Iowa City, Iowa.