

CONSORTIAL MEMBER PROFILE: The Institute for Work & Health

Imagine a program of scientific research where chiropractors, physicians, epidemiologists, and rehabilitation professionals set the research agenda, then bring their individual strengths to bear on important clinical and health policy questions.

No need for imagination, says Dr. Pierre Côté, a chiropractor and scientist at Toronto's Institute for Work & Health (IWH). "It happens here every day."

In terms of scientific staff, the IWH, which joined the Consortium just six years ago, is probably one of the largest members. According to president Dr. Cameron Mustard the Institute (*see article on page 255*) brings many assets to the table.

"University-based and professional training programs tend to segregate the various professional disciplines," he says. "The Institute allows, indeed encourages scientists from different clinical perspectives to work together. I feel safe in saying that, within Canada, we are the research organization with the longest-standing, sustained collaboration between chiropractors, physicians and other rehabilitation professionals."

Dr. Côté agrees that the atmosphere at IWH promotes a multi-disciplinary approach to research. "Here, the researcher is given the marvelous opportunity to collaborate with scientists across a range of specialties: medicine, economics, sociology, anthropology, communications, psychology, epidemiology, biostatistics, physiotherapy and occupational therapy."

Both Drs. Côté and Mustard cite the leadership of IWH senior scientist Dr. Claire Bombardier – a specialist in internal medicine and rheumatology and professor of medicine at the University of Toronto – in fostering this multi-disciplinary approach to research.

Chiropractor-researchers at IWH also benefit from the presence of the Cochrane Collaboration Back Review Group, which has resided at the Institute since 1995. Under the direction of its current co-editors – Dr. Bombardier and Dr. Lex Bouter, scientific director of the Institute for

Research in Extramural Medicine (EMGO) at the Vrije Universiteit Medical Centre in Amsterdam – the Group coordinates international reviews of literature on primary and secondary prevention and treatment of neck and back pain and other spinal disorders.

Chiropractor-researchers focus on WMSD

The four chiropractor-researchers at the Institute for Work & Health work mainly within the research area known as "*Health Services Research, Monitoring and Evaluation.*"

"This research creates evidence for the diagnosis, prognosis, treatment and management of work-relevant musculoskeletal disorders or WMSD," explains chiropractor-researcher Dr. Pierre Côté. "We define this as any disorder of muscle, tendon, nerve and/or ligament which is aggravated by or caused by work."

Within this area, chiropractor-researchers work to:

- identify, evaluate/develop tools which describe work-relevant health conditions
 - describe the prevalence, incidence, natural history and impact of these conditions
 - describe how they are currently being managed
 - understand risk factors for disability and also prognostic factors for recovery
 - describe and evaluate interventions toward facilitating recovery
 - promote practice improvements and encourage evidence-based practice.
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Chiropractor-Researcher Profile

Dr. Pierre Côté

As a chiropractor and scientist at the Institute for Work & Health, Dr. Pierre Côté spends a fair amount of time doing research that isn't specific to chiropractic interventions and practice.

"But in most cases, my research is relevant to the chiropractic community," he explains. "That includes clinicians, practitioners, consumers of chiropractic services, employers and policy makers."

Dr. Côté worked in private practice for 10 years before pursuing degrees in epidemiology and surgery, and bioethics. He is now an assistant professor in the departments of Public Health Sciences and Health Policy Management and Evaluation at the University of Toronto.

He believes that chiropractor-researchers at IWH bring a special sensibility to their work. "We combine hands-on, clinical experience with methodological knowledge."

Research into chiropractic, or involving chiropractors, has grown over the past five to 10 years, mainly because

Continued on page 256



Dr. Pierre Côté
Scientist, IWH

What does IWH stand for?

Since 1990, the Institute for Work & Health (IWH) has been providing research and evidence-based practical tools for clinicians, policy-makers, employees and managers.

The mission of this independent, not-for-profit organization is "to conduct and share research with workers, labour, employers, clinicians and policy-makers to promote, protect and improve the health of working people."

The IWH brings together 17 full- and part-time scientists, as well as 22 adjunct scientists from across Canada, the U.S. and Europe. There is a strong research focus on factors that contribute to work-related soft-tissue illness, injury and disability. The researchers work in several distinct but related areas, including Health Services Research, Monitoring and Evaluation; Workplace Studies; and Population Workforce Studies.

"Our research aims to inform both primary prevention efforts – programs, policies and initiatives to prevent work-related injury – and secondary prevention efforts – treatment and management programs to reduce disability and recurrence of work-related injury," explains IWH president Dr. Cameron Mustard, an epidemiologist who specializes in the field of population health. "We are also engaged in examining broader, population-level work-health issues."

Continued on page 256



Dr. Cameron Mustard
President, IWH



Dr. Claire Bombardier
Senior Scientist, IWH

governments have become more willing to fund such studies. He and the three other IWH-based chiropractor-researchers (profiled below) are all currently funded by the Canadian Institutes of Health Research.

Dr. Côté particularly enjoys mentoring graduate students who spend time at IWH, usually doing research which becomes part of their Masters degree or PhD.

“They are the future of rehabilitation research in Canada,” he says. “We want to give them the best possible grounding here and then sit back and watch to see how much they will accomplish.”

What does IWH stand for? *Continued*

The IWH is also deeply committed to sharing evidence-based knowledge with others in the work-health matrix. It is one of a handful of research organizations with a fully-funded and staffed department of Knowledge Transfer and Exchange.

The IWH maintains an “arm’s length” relationship with its core funder, the Ontario Workplace Safety & Insurance Board (WSIB). Scientists also seek and receive grants from funding agencies such as the Canadian Institutes of Health Research, the US National Institutes of Health and the Social Sciences and Humanities Research Council of Canada.

The Institute is formally affiliated with the University of Toronto, York University, the University of Waterloo in Waterloo, Ontario, and McMaster University, in Hamilton, Ontario.

“Our association with the university community and our access to workplaces and key sources of data have made us a respected training centre,” says Dr. Mustard. “Scientists, students and policy-makers from around the world have come here to consult and study. They have made outstanding contributions to our own research program, while gaining first-hand experience and making useful connections to the work and health research community.”

To find out more about IWH scientists, students, research and knowledge transfer programs, and products, please contact Kathy Knowles Chapeskie at 416 927 2027 extension 2115, or visit their website at www.iwh.on.ca.

Dr. Cote’s current research projects include:

- ***2000–2010 Joint and Bone Decade Task Force on Neck Pain***

Dr. Côté is playing a key role in the five-year, \$3 million Task Force on Neck Pain and its Associated Disorders. This initiative, sponsored by the World Health Organization, aims to reduce the social and financial cost of musculoskeletal disorders – including neck pain – by promoting prevention, improving diagnosis and treatment, and advancing research in these areas.

The neck pain project, which is funded by the Canadian Chiropractic Protective Association and its U.S. counterpart, the National Chiropractic Mutual Insurance Company, comes under the umbrella of the massive, international project known as 2000–2010 Bone and Joint Decade. Researchers from Canada, the U.S. and Europe will conduct and eventually publish several studies on neck pain including a systematic review of the existing scientific literature on neck pain and associated disorders and an assessment of the risk associated with chiropractic manipulation of the neck.

- ***The Arizona State University Healthy Back Study***

The goal of this prospective study of 1,600 workers is to identify cost-effective ways to help injured workers with low-back pain. This includes measuring the long-term effects of different types of care – for example, chiropractic care – in return-to-work.

Dr. Côté and his colleagues are now reviewing workers’ compensation data and telephone interviews from some 950 workers, and they expect to publish their results within the next 12 to 18 months.

- ***Course and Determinants of Neck Pain, Back Pain and Depression***

In the past, researchers believed that back pain followed a “phases-of-disability” model, progressing from acute to chronic and then to recovery. But there’s growing evidence that the course of back pain is fluctuating and often recurrent. There is also some evidence that depression may be one determinant of chronic pain.

Using data from two cohort studies – the Canadian National Population Health Survey (NPHS) and the Saskatchewan Health and Back Pain Survey – Dr. Côté and his colleagues are looking at patterns of disability in people with neck pain and back pain to determine possible causal factors and identify new opportunities to intervene.

- ***Lost-time Claims for Occupational Neck Pain***

Quite often, neck pain complaints are grouped together with back and upper extremity complaints. Dr. Côté and his team are developing a methodology to identify occupational neck pain cases using 1997-1998 data from the Workplace Safety and Insurance Board of Ontario. The team will use the data to determine the prevalence and incidence of occupational neck pain, predictors of duration on compensation, health care utilization (before, during and after an episode), and the impact of legislative changes. This project's long-term goal is to provide a clearer picture of the course of occupational neck injuries and inform both primary and secondary prevention strategies to reduce the burden of disability. The project is funded by the Special Ontario Chiropractic Association Research Fund and Ontario Ministry of Health and Long Term Care.

Knowledge Transfer Associate Profile:

Rhoda Reardon

As one of IWH's two full-time knowledge transfer associates, Rhoda Reardon investigates and designs strategies for exchanging knowledge between researchers and key users, including clinicians. "I spend a lot of time thinking about conduits for new evidence," says Reardon, who trained and worked as an occupational therapist before joining the Institute team.

"We're interested in reaching all clinicians who treat musculoskeletal conditions, especially as they affect workers," she says. "That probably includes every chiropractor in the province of Ontario. So it's fair to say that chiro's are a key audience for us. We want them to hear about our research and in turn learn from them what the priorities and issues are from a practice perspective."

Reardon's current knowledge transfer projects include:

- ***The Educational Influentials (EI) Project***

As part of ongoing Knowledge Transfer & Exchange activities at IWH, Reardon is working to identify so-called "education influentials" or EIs within various professional communities. The concept of the EI is based on work of an American researcher, Roland Hiss, who demonstrated that health care providers (his work involved physicians) constantly learned from peers whom they naturally selected as mentors and teachers. He further demonstrated that these individuals share common characteristics – for example, they are perceived as being current and



Ms. Rhoda Reardon

Knowledge Transfer Associate, IWH

up to date in their fields, possess high levels of expertise, and are, by all accounts, caring clinicians.

Reardon is working to identify EIs within various professional groups – occupational health nurses, chiropractors, physiotherapists, occupational therapists and kinesiologists. She hopes to collaborate with the Ontario Chiropractic Association to identify EIs – both in the area of musculoskeletal injury and return-to-work – from within Ontario's chiropractic community. Once identified, these individuals would be recruited to assist in relevant knowledge transfer activities.

Chiropractor-Researcher Profile

Dr. Gabrielle van der Velde

Before coming to IWH to pursue her graduate studies and launch her research career, Dr. Gabrielle van der Velde was busy working in private practice and teaching students at the Canadian Memorial Chiropractic College in Toronto.

Currently on study leave from her position there as an associate professor, she is now doing her PhD in clinical epidemiology. Her research thesis involves how health care decision-making methods can be applied to neck pain management.



Dr. Gabrielle van der Velde
PhD Student and Research Fellow

Dr. van der Velde says she finds herself in “a perfect position” at IWH.

At the Institute, she says, her chiropractic training is seen as a plus because the value of her clinical background in treating musculoskeletal conditions is recognized and respected. “As someone who has delivered chiropractic care in the real world, I think I’m better able to determine research questions and methods which are both relevant and practical,” she explains.

Dr. van der Velde believes IWH is creating important bridges between the chiropractic profession and other institutions involved in health care training, research and policy.

“These bridges will help ensure that our goals as chiropractors are ‘in sync’ with those of our colleagues. These links will also ensure we don’t isolate ourselves, that we expose ourselves to current musculoskeletal research that is relevant to our own scope of practice,” she says.

Dr. van der Velde’s current research projects include:

- ***Decision and cost-effectiveness analyses of neck pain treatments***

As a participant in the 2000-2010 Joint and Bone Decade Task Force on Neck Pain, Dr. van der Velde is developing a comprehensive overview of the benefits and risks of neck pain treatments – including chiropractic manipulation – using decision analytic methods. Her model will incorporate research on risks and benefits for each treatment option, and will include patient-based preferences for treatment outcomes. Her work will be used to develop new evidence-based practice guidelines for the treatment of neck pain.

Chiropractor-Researcher Profile:
Dr. Carlo Ammendolia

Even though he is involved in a variety of research projects at IWH and is working toward his PhD at the University of Toronto, Dr. Carlo Ammendolia still maintains a part-time chiropractic practice in the town of Maple, Ontario.

“I’ve always been interested in integrating academics



Dr. Carlo Ammendolia
PhD Student and practising chiropractor

with field work,” explains Dr. Ammendolia, who is also certified or holds degrees in occupational health, clinical acupuncture, rehabilitation and clinical epidemiology.

“I feel absolutely privileged to be a part of IWH, to work directly with scientists who are among the most respected in their field in the world,” he says. “The opportunities here for learning are wide and deep, and the atmosphere is genuinely cooperative. There is a holistic approach to the research that reflects the diversity of disciplines represented here.”

The chiropractic profession will only succeed if it can respond to present and future challenges, Dr. Ammendolia believes. “Much will depend on our own ability to produce research. At the same time, field chiropractors must be open and receptive to participating in multi-disciplinary research projects.”

Dr. Ammendolia’s current research projects include:

- ***Utilization trends of chiropractic services in Ontario***

Recent U.S. surveys confirm that the use of alternative health products, practices and services is rapidly increasing, including the utilization of chiropractic care. This study will use data from the Ontario Health Insurance Plan (OHIP) and the Workplace Safety and Insurance Board (WSIB) to identify trends in the utilization of chiropractic services in Ontario over the past five years. The study will determine the number and type of services performed, the demographic distribution of patients, the average number of visits per patient, the costs per patient and trends in the use of x-ray services. The study will also compare the growth in utilization of chiropractic services with growth in the overall population.

Chiropractor-Researcher Profile:

Dr. Jill Hayden

Before deciding to accept a fellowship at the Canadian Memorial Chiropractic College in Toronto, Dr. Jill Hayden worked briefly in clinical practice in Calgary, Alberta.

“After my maternity leave, I started my Master’s degree in clinical epidemiology at the University of Toronto, and transferred to the PhD program a year later,” she says.

Today, after four years working as a graduate student at IWH, Dr. Hayden is eager to reflect on her experiences.



Dr. Jill Hayden

PhD student

“It’s been a terrific environment in so many ways. Because of the multi-disciplinary nature of the scientists there, I’ve been exposed to different ways of thinking. This has been helpful when I’ve needed to interact with clinicians or scientists from other disciplines,” she says.

Dr. Hayden believes that the strong focus on knowledge transfer at IWH has influenced how she does research, and also how she assesses the work of other researchers.

“I now automatically think about the end-user of a particular study, and I try to design and present my research in ways that will be most useful,” she explains.

Dr. Hayden’s current research projects include:

- ***A framework to understand chronic disability in low-back pain***

The concept of low-back pain (LBP) as a chronic condition continues to change as new research becomes available. While many studies have been done to predict chronicity, there is limited, “clinically useful” information about factors which affect the prognosis and course of LBP.

Dr. Hayden will review the prognosis literature on LBP and then develop a model for chronicity which will be tested using

data from the first Canadian Public Health Survey. Interviews with patients will provide qualitative data. The ultimate goal is to improve clinical management of chronic LBP and prepare the way for future intervention research.

Chiropractor-Researcher Statement of Impact

“It’s hard to believe that just seven years ago there were no chiropractors doing research at the Institute for Work & Health,” says Dr. Pierre Côté, who has served as a mentor to each of the students interviewed here.

Since then the role of the chiropractor-researcher at IWH has flourished:

- Since 1997, chiropractor-researchers have written or contributed to more than 40 articles published in a variety of journals including the *New England Journal of Medicine*, *Spine*, *Medical Care*, the *Journal of Rheumatology* and the *Journal of the Canadian Chiropractic Association*.
- Chiropractor-researchers have delivered more than 90 presentations and lectures in Canada, the U.S. and Europe.
- IWH scientists and students have successfully obtained provincial, national, international funding. They have established research collaborations with a variety of groups including the Cochrane Collaboration, the Institute for Research in Extramural Medicine (EMGO) in the Netherlands, the Canadian Task Force for Preventive Health Care, Arizona State University, the University of Alberta and the Karolinska Institute in Sweden.

“I think we have developed into a coherent and productive group,” Dr. Côté says. “I like to think of us as a sort of case study, an example of how one can start from nothing and, in a relatively short period of time, make an impact on research, indeed contribute to an entire professional discipline. This has all been possible because of the vision, leadership and infrastructure that IWH provides”.

List of funding agencies and grants:

Chiropractor-researchers at the Institute for Work & Health have been or are currently being funded by:

- Arizona State University*
- Canadian Chiropractic Protective Association*
- Canadian Institutes of Health Research*
- Health Canada (PhD Fellowship, National Health Research and Development Program)*
- Institute for Work & Health*
- Japlan Inc*
- Länsförsäknngar Insurance Company*
- National Chiropractic Mutual Insurance Company (NHRDP)*
- Ontario Ministry of Health and Long-Term Care (Special Chiropractic Fun)*
- University of Toronto (Mary H. Beatty Top-up Scholarship)*
- University of Toronto Faculty of Medicine (Walter Ward Graduate Student Award in Pain Research)*