



Rheumatoid Arthritis in the First Nations of Manitoba



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Left to right, Dr. Hanı El-Gabalawy, Joyce Greene and Dr. Brenda Elias

FOUR MILLION CANADIANS have arthritis but the incidence of the disease is much higher in the Aboriginal population – more than 19 per cent. Since the Aboriginal population is much younger than the general population, this would be equivalent to 27 per cent if the age composition of the general population were the same. Is it possible to predict who will get rheumatoid arthritis (RA) and stop the disease before disabling symptoms appear? Why is RA more aggressive and more severe in

the First Nations population than in other populations in Canada? Why do First Nations people obtain care for RA at a later stage in the development of the disease?

These are questions Network investigator Dr. Hanı El-Gabalawy pondered as he treated many Aboriginal patients in his rheumatology practice at the University of Manitoba in Winnipeg. He is in a unique position to find answers to these questions. With Dr. Kiem Oen and a team of investigators at the

University of Manitoba Arthritis Centre, he has been undertaking genetic studies in this population for a number of years. Their work has focused on both disease predisposing and disease protective genes. The balance between these genetic influences is demonstrated in a current publication (Oen K, et al: J Rheumatol 32:983, 2005; also see accompanying editorial in J Rheumatol 32:971, 2005). Most recently, the team has participated in an international multi-centre study headed by Dr. Lee Nelson in Seattle, Washington, investigating multiple genes in the HLA region that may predispose to RA. Dr. El-Gabalawy's team received funding from the National Institutes of Health specifically to study Manitoba Aboriginal populations, in which 50 per cent of First Nations people with RA are members of multi-case families. He says, "If we can identify RA and people at risk as early as possible, for example by screening and following high risk family members of RA patients for the development of RA auto-antibodies before the disease develops, down the road, we could potentially consider embarking on

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Message from the Scientific Co-Directors



CPimages / S. Sacco

Dr. Robin Poole and Dr. Jane E. Aubin

April 1 marked the start of the second cycle of funding from the Networks of Centres of Excellence for the Canadian Arthritis Network. We begin the cycle with renewed energy and a sense of excitement. **Today's arthritis research :: Tomorrow's cure** is our new slogan. It expresses the confidence we share with our Network investigators and our partners that CAN research

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Rheumatoid Arthritis

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innovative preventive strategies in this population. This also gives us a great opportunity to get a better understanding of how genetic and environmental factors interact to cause this chronic disease.”

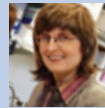
Dr. El-Gabalawy’s current research involves both genetics and knowledge transfer. In addition to discovering a way to diagnose RA at the earliest possible stage, he wants to enhance knowledge of the disease in the First Nations community so people seek care in a more timely manner. The research will also change the way care is administered so that it is more culturally appropriate. He says, “There are sociological and geographical issues that create challenges in providing care for RA to the First Nations people in Manitoba. We have to meet those challenges.” The study is unique because it is the first to attempt to prospectively establish a pre-disease cohort of high risk individuals.

One person who is very supportive of this study is Joyce Greene, a member of the Canadian Arthritis Network’s Consumer Advisory Council, who is a First Nations person with RA. She was 33 years old and the mother of two children when she was diagnosed with severe RA. She had both hips replaced and was unable to work. She tried various medications for seven years but none slowed the progress of the disease or reduced the excruciating pain. The low point for her in her disease was when she needed the help of a home care worker to brush her teeth. Seven years ago she began to take one of the new biologic drugs and she says, “It was like someone came up behind me and turned the switch off. I had instant relief. I was able to get up, get dressed and meet my home care worker at the door. I told her if I knew how to tap dance, I would.”

The Greene family history demonstrates why research and knowledge transfer are so important. Joyce Greene’s mother died at age 38 from complications of RA and cardiac problems. She had participated in a clinical trial for methotrexate in the 1960s and Joyce is proud of her contribution. Joyce’s older brother, who lives

in northern British Columbia, was diagnosed with RA three years ago. He was immobilized by the disease and only at Joyce’s urging did he travel a great distance to Vancouver to see a rheumatologist, who prescribed a drug similar to the one that helped Joyce. It alleviated his symptoms as well.

The experience of Joyce Greene’s family also illustrates the difficulties faced by First Nations people in dealing with the disease. They were stricken with RA at an early age and it was very aggressive, disabling and difficult to treat. Joyce was fortunate in that she lived in Winnipeg and had access to the care of a rheuma-



Dr. Elias says that it is very important to understand how the disease is experienced in the First Nations population and to look at the cultural barriers to prevention, early diagnosis and access to treatment.

tologist. Her brother, living in a remote community, did not have sufficient information about RA or access to a specialist in his community. Joyce Greene has been very active with consumer groups such as Patient Partners® and the Manitoba Advocacy Committee of The Arthritis Society (TAS) as well as the Canadian Arthritis Patient Alliance. She was also a self-management leader with the Arthritis Self-Management Program. Currently she is involved in planning for the Summit on the Standards for Arthritis Prevention and Care that will take place in November and with an Aboriginal working group in TAS that is reformatting the First Nations Arthritis Self-Management Program to bring it up to date and have it translated into a number of First Nations languages. Their goal is to make it available to communities across Canada as part of an awareness initiative, which includes the use of telehealth to bring information to isolated

communities and avoid the need to travel great distances to larger centres. Joyce said, “Awareness is important from a First Nations perspective and from a government perspective. In the 21st century no one has to live with the debilitating effects of RA. There is hope and help should be available to everyone no matter where you live.”

The knowledge transfer aspect of the project is very significant. Dr. El-Gabalawy sought partners who bring different expertise and complement the biological research he is doing. The Centre for Aboriginal Health Research at the University of Manitoba is a partner and its head, Dr. John O’Neil is one of the co-investigators. Another partner is the Assembly of Manitoba Chiefs’ Health Information Research Governance Committee (HIRGC), which has been very supportive of the project. HIRGC also supports the work of the Northern Medical Unit of the University of Manitoba, which specializes in providing care to northern communities. The collaboration with this Unit is critical to the success of the project because of its knowledge of the community.

The study, involving the urban Aboriginal community in Winnipeg and the rural communities in Norway House and St. Theresa’s, will use specific questions and interview techniques for the First Nations community to inform the researchers who will communicate with health care providers, with a particular focus on Aboriginal communities in northern Manitoba, local physicians, the chiefs and community leaders. Information will be distributed in pamphlets and on the radio. Plans are also underway to extend the study to a population of First Nations people in Saskatchewan.

A primary co-investigator on the project is Dr. Brenda Elias, who is the Associate Director of Research at the Faculty of Medicine’s Centre for Aboriginal Health Research at the University of Manitoba. She is also Assistant Professor in the Department of Community Health Sciences. Dr. El-Gabalawy sought her expertise in understanding health conditions, health access issues and the determinants of health in

the population he was investigating. Her area of specialty is in social science research and the social construction of health conditions. The Centre works to improve the quality of life of First Nations people both in urban and rural communities.

Dr. Elias says, "The multidisciplinary team approach is one that communities understand. People don't divide their health status into distinct pillars of science. That is not how someone lives with a disease. They have a more holistic experience so the shift to multidisciplinary science and teams makes more sense to people at risk for RA and to people who have it."

The Centre's knowledge transfer program creates stronger health care and social service systems. It has enjoyed great success in population health research and working with clinicians, complementing their work with

research. Dr. Elias says that it is very important to understand how the disease is experienced in the First Nations population and to look at the cultural barriers to prevention, early diagnosis and access to treatment.

What is needed is a sense of the problems this community has in living with the disease, their contact with physicians and the usefulness of information provided to them. The project will look at how RA is experienced, what make their arthritis different than the arthritis of other people and whether they are disillusioned and have given up on care or feel empowered. It will also examine their fears that other family members may get RA, the relationships people have with their physicians and whether they are using traditional medicine to complement their treatment.

The intent of the knowledge transfer component of the project is to embed

vigilance in individuals and to create networks of vigilance within families and communities, to be proactive in early detection. If this works, family members will see the symptoms and encourage individuals to seek treatment. If the treatment works, they will talk about it and knowledge about arthritis will spread in the community. Dr. Elias hopes the study will empower people and create awareness that there is something that can be done about RA. The respondents in the study are paving the way for new treatments and new understandings of the disease. They are partners in the solution. Dr. Elias says, "Joyce Greene is a conduit in the network in understanding RA. She is bringing others into the network. Her role in expanding understanding and networking with people is a testimony of what could work. Her ability to make a difference is what knowledge transfer is." ■

Message from the Scientific Co-Directors

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will improve the quality of life of people with arthritis.

With the input of existing Committee members and the approval of the Board of Directors, we have implemented a revised committee structure that aligns committee mandates with the Network's second cycle strategic goals and increases the participation of partners and receptors. The functions of the Management Committee and Research Advisory Committee were merged into the new Research Management Committee (RMC), which reports to the Board of Directors. The RMC is responsible for the Network's Strategic Plan, making recommendations on grant competitions, review and selection, monitoring progress of research projects, identifying and ensuring effective transfer of Network innovations with potential commercial or social benefit and providing oversight of Network operations.

A new Partnerships & Sustainability Committee was created to establish strategic and fiscal partnerships with academic institutions, federal and provincial agencies and the private sector. It is also responsible for ensuring that the Network is sustainable when the current cycle of NCE funding is complete in 2012.

Planning is underway for the 2005 Annual Scientific Conference, which offers an exciting program and opportunities for networking. The conference program is designed to highlight research activities in CAN's three Strategic Research Initiatives in osteoarthritis, inflammatory joint diseases and bioengineering for the restoration of joint function. It will also provide updates on Strategic Research Resources and showcase the talent and accomplishments of Network trainees. Be sure to check the conference program on page 8 of this issue and register early.

We are pleased to report that seven Strategic Research

Initiative Development grants were awarded in CAN's competition for research funding for 2005-2006. These multi-investigator/multi-institutional projects span research across all three of CAN's Strategic Research Initiatives and include research on cartilage regeneration, tissue engineering for joint surface replacements, synovitis in early rheumatoid arthritis, quality of care for people with rheumatoid arthritis, self-management for juvenile idiopathic arthritis and workplace disability. For more detail, please visit the CAN website at www.arthritisnetwork.ca

Planning has begun on a workshop on preclinical models for osteoarthritis and their analysis to be held in 2006. The workshop will be valuable for researchers, industry and regulatory agencies facing challenges in determining which models and technologies to use in pre-clinical studies to assess the efficacy and toxicology of new treatments for osteoarthritis. Watch for news of this workshop in the next issue of Joint Ventures. For more information contact Johnathan Riley at 416-586-3167 or at jriley@arthritisnetwork.ca

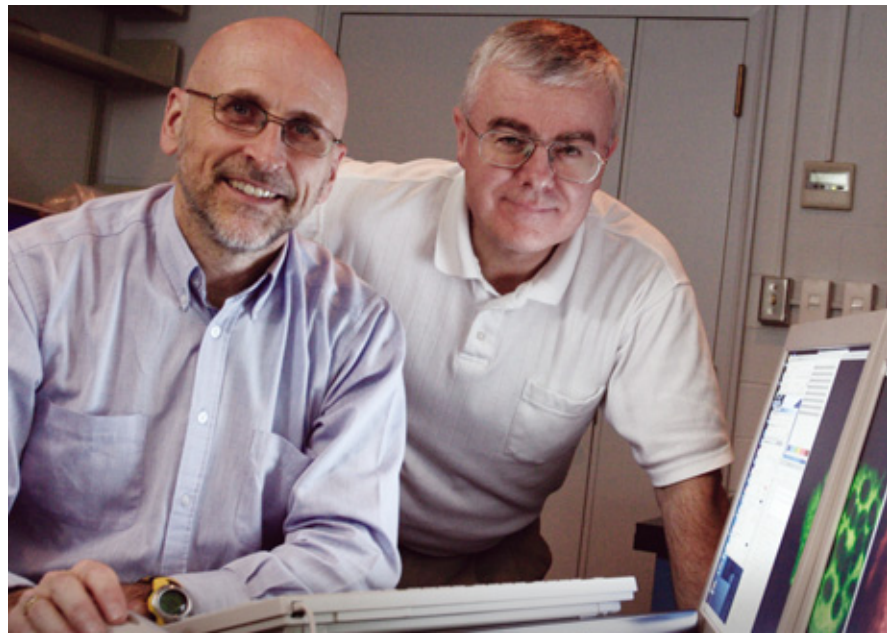
We said a sad but fond goodbye to Dr. Tineke Meijers, CAN's Director, Research and Development, who resigned in May to take up a new position as Vice President, Business Development, North America at TNO Pharma. We would like to thank Tineke most heartily for her dedication and hard work that helped to make CAN such a success. Tineke joined CAN at its inception and quickly learned what the Network investigators needed, encouraged networking and collaboration and became an invaluable resource. Her knowledge of scientific research, the international arthritis research community, and the pharmaceutical industry, together with her extroverted personality, helped CAN achieve success in its first cycle and secure a second cycle of funding. We know that her time in the Network has helped prepare Tineke for her new professional challenges and we wish her every success in this next phase of her career. ■

CAN investigators crack 100-year-old skeletal mystery

A team of CAN investigators and trainees at the University of Western Ontario (UWO) were conducting a series of experiments that were plagued by variability.

THE TEAM TRIED TO determine the cause of the variability and examined a number of factors, none of which appeared to have caused the anomalies. Then postdoctoral researcher Dr. Svetlana Komarova observed something that led to an amazing breakthrough. She noticed that the colour of the culture medium containing the bone cells that she was studying varied slightly from dish to dish and from day to day. This observation intrigued Dr. Jeff Dixon, whose area of specialty is cell physiology, and Dr. Stephen Sims, whose expertise is in electrophysiology and cell signalling, as well as Dr. Alexey Pereverzev, a molecular biologist and Jonathan Shum, a summer student from the University of Toronto's Faculty of Dentistry.

Dr. Komarova knew that the variation in colour is caused by different levels of acidity, and thought that this might be leading to the inconsistencies in the experiments. Excited by this possibility, members of the team systematically changed the acidity of the culture medium and observed that acidification consistently activated a transcription factor called NFAT within osteoclasts. Dr. Sims refers to Dr. Komarova's astute observation as an example of what Louis Pasteur meant when he said in a lecture

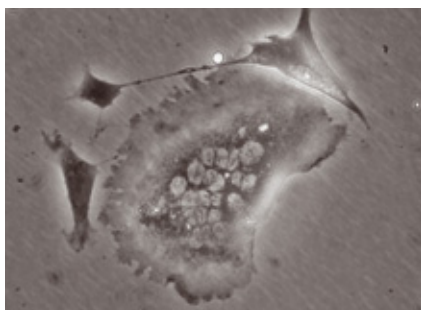


Left to right, Dr. Stephen Sims and Dr. Jeff Dixon

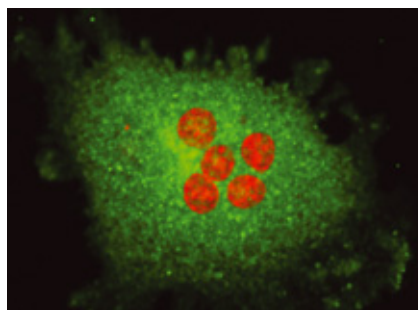
in 1854 that "Dans les champs de l'observation le hasard ne favorise que les esprits préparés." (In the fields of observation, chance favours only those minds which are prepared.)

Scientists have known for over 100 years that acidity in the body causes destruction of the skeleton but did not understand the mechanism. The CAN team made two important discoveries. First, that acidity directly activates osteo-

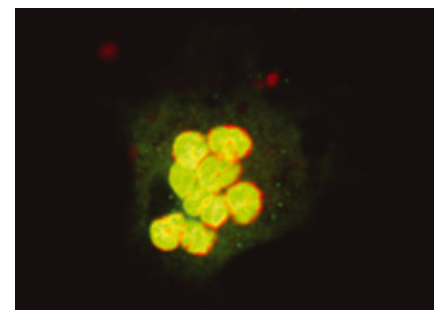
clasts, leading to destruction of bone. Second, studies spearheaded by Dr. Pereverzev also pinpointed the molecular identity of the acid receptor on these cells. Acidity was found to trigger a recently discovered G protein-coupled receptor, referred to as ovarian cancer G protein-coupled receptor 1 or OGR1, which is present on osteoclasts. Stimulation of this receptor leads to an increase of cytosolic calcium, which



Appearance of a living osteoclast "the bone destroying cell" viewed using a microscope.



NFAT (green) is located throughout the cytoplasm in an unstimulated osteoclast (nuclei are stained red).



Stimulation with acid causes NFAT to translocate to the nuclei, seen as yellow.

activates NFAT leading to bone loss.

These discoveries mean that pharmaceutical and biotechnology firms can now develop specific drugs targeted at the OGR1 receptor to prevent the activation of osteoclasts and the bone loss that results from acidosis. This is significant for people with rheumatoid arthritis, which causes inflammation leading to a local increase in acidity accompanied by bone loss. There are drugs that target osteoclasts and decrease bone resorption, but they inhibit all the osteoclasts in the body. Therefore, these drugs not only affect the osteoclasts that are destroying joints but also osteoclasts occupied with the normal turnover of bone. The discovery from the UWO team raises the possibility that new drugs can be developed that target only the osteoclasts involved in the disease process and not those involved in normal bone remodelling.

Drs. Dixon and Sims have a unique expertise in studying osteoclast biology. Their laboratory is one of only a few in the world that applies an array of techniques to study the electrophysiology, cell signalling and movement of osteoclasts. The lab is internationally recognized for its expertise and has conducted research for pharmaceutical and biotechnology companies investigating novel anti-resorptive agents and characterizing defects in osteoclasts isolated from genetically modified mouse models.

The research conducted by Drs. Dixon and Sims was supported not only by CAN but also by the Canadian Institutes of Health Research through a collaborative partnership with The Arthritis Society. It provided a training opportunity for Dr. Komarova, who is now a CAN scholar and recently appointed Assistant Professor of Oral Biology in the Faculty of Dentistry at McGill University. Jonathan Shum is completing his DDS and will graduate from the University of Toronto in 2005.

Drs. Dixon, Pereverzev and Sims are currently working on the next steps in this project, following up on the precise mechanisms underlying acid-activated bone loss. For further details, see Proceedings of the National Academy of Sciences USA 102: 2643-2648, 2005. <http://www.pnas.org/cgi/content/full/102/7/2643> ■

National Research Partnership in Inflammatory Joint Diseases

AMONGST THE RESEARCH priorities of the Canadian Arthritis Network (CAN) in its second cycle of funding, which began April 1, 2005, is the Strategic Research Initiative in Inflammatory Joint Diseases (IJD). CAN has formed a partnership with The Arthritis Society and the Canadian Institutes of Health Research's Institute of Musculoskeletal Health and Arthritis and its Institute of Infection and Immunity

The deadline for submission of Letters of Intent is August 22, 2005

to pursue research in this area and the partners are contributing up to \$1.15 million per year for five years. A request for applications for the National Research Partnership in Inflammatory Joint Diseases will be launched on June 15, 2005.

Each proposal will require a cash contribution of at least 25 per cent per annum from an outside partner. The 25 per cent is a minimum requirement and there is no restriction on cash contributions over this amount. This process is designed to promote partnerships, which are an NCE requirement, and foster creation of new knowledge and its translation to help the patient with arthritis. By implementing this program, we are also making available more funds to support research in the community.

The deadline for submission of Letters of Intent (LOIs) is August 22, 2005 and full applications for selected (LOIs) are due for review on February 1, 2006. Funding of successful applications begins on May 1, 2006.

A Consensus Conference on Inflammatory Joint Diseases held in May 2004, identified the areas of unmet need and the following research priorities were established:

- 1 Which genetic and environmental factors play a role in the initiation of IJD, and which tools e.g., clinical, laboratory or imaging, can detect early IJD, monitor disease activity and predict outcomes?
- 2 What is the basis of the pathogenesis of early and established IJD and how can this knowledge be effectively applied to new drug targets and screening tools?
- 3 How do people make decisions regarding IJD treatment and management options?
- 4 How can we optimize access to, and delivery of, diagnostic, therapeutic and other health care services to individuals with IJD?
- 5 What models of knowledge translation and exchange best communicate research development and outcomes across the broad spectrum of arthritis stakeholders?
- 6 How can we better understand and reduce the psychosocial and economic burden of IJD?

The National Research Partnership in Inflammatory Joint Diseases is holding a Partnerships Workshop for Network investigators, government, industry and venture capitalists on October 31 – November 1, 2005, in conjunction with the CAN 2005 Annual Scientific Conference. This is an opportunity for investigators to meet with other prospective research partners to secure the additional funding required for this program.

For more information about this initiative, please contact Johnathan Riley at 416-586-3167 or at jriley@arthritisnetwork.ca ■

Searching for pain relief

Pain is a sensation that can range from mildly uncomfortable to agonizing and unbearable.

FOR THOUSANDS OF YEARS people have sought a remedy that would alleviate their pain. Compounds derived from plants such as willow bark were used but only in the late 19th century did scientists develop the first mass-produced effective painkiller.

People with arthritis experience severe, chronic pain which is disabling, prevents them from working and has an impact on quality of life. Consumers who attended the Osteoarthritis Consensus Conference in 2002 ranked alleviation of pain and fatigue as their top research priority. As one of its responses to this input, the Canadian Arthritis Network created a pain theme and expanded Network membership to include leading Canadian pain investigators.

Dr. Jason McDougall is a CAN investigator engaged in integrative research, looking at the chemical mediators that destroy the joint, making it arthritic. These are the same mediators that cause

During arthritis, the nerves in the joint become hypersensitive causing an increase in electrical input to the central nervous system and the brain interprets this heightened activity as pain.

pain. During arthritis, the nerves in the joint become hypersensitive causing an increase in electrical input to the central nervous system. The brain interprets this heightened activity as pain. Dr. McDougall is interested in controlling the electrical signals in the joint, before they reach the brain. He is also investigating how pain is related to inflammatory changes that occur in the joint.

Current drugs for pain are taken systemically and have the potential to



Left to right, Jennifer Thomson and Dr. Jason McDougall

act on multiple organs such as the heart or kidneys. They also affect the brain so there is potential for addiction. To circumvent some of these problems, drugs could be delivered locally into the joint allowing administration of lower doses and avoiding side-effects.

The search for an agent to reduce pain and inflammation led Dr. McDougall to investigate the role of opioids produced by the body which have the capacity to control the symptoms and disease progression of arthritis. He identified a morphine-like compound produced in joints which appeared to have the potential to control the inflammation and pain of arthritis but it worked only in a normal joint when a painful stimulus was applied. It also worked in early onset or acute inflammation but not in advanced chronic disease. This discovery led to Dr. McDougall's current research on a pharmacological intervention that would recoup the anti-inflammatory and analgesic effect of the compound. He would like to collaborate with industry in pursuing the investigation, using the

models he has to test drug mediators.

Another promising area of investigation is the use of cannabis derivatives to alleviate pain. Although there is a social bias against the use of cannabis, some people would like to use these compounds as analgesics without their euphoric or psychoactive side effects. Dr. McDougall has identified a family of cannabis-like compounds that do not cross the blood brain barrier so they cannot cause these unwanted psychological side effects. They have the potential to be used as part of a combination therapy with opioids which would increase their effectiveness and allow for a reduction in their dose.

Many aspects of pain research are relatively new. With its Pain Theme, and the involvement of internationally-renowned pain researchers as members, CAN is positioned to offer basic scientists, clinicians and industry new opportunities to collaborate in an area that could offer a significant improvement in the quality of life of people with arthritis. ■

Informatics & Ethics Strategic Research Resource Workshop

The Canadian Arthritis Network hosted an Informatics & Ethics workshop February 18-19 for Network investigators, experts in the field of bioinformatics research, government, industry and people with arthritis.

THE GOAL OF THE WORKSHOP was to help prioritize the activities of CAN's new Strategic Research Resource in Informatics & Ethics by:

- defining the inefficiencies and challenges faced by arthritis bioinformatics researchers;
- identifying best practices and strategies designed to address inefficiencies and challenges;
- identifying CAN's role in providing a central bioinformatics resource;
- prioritizing infrastructure needs for the CAN arthritis research community.

The following presented on their experiences, funding sources, challenges and solutions:

Dr. Jack Tu, Senior Scientist at the Institute for Clinical Evaluative Sciences (ICES) and Head of the Heart & Stroke Research Pod discussed data collection and the impact of the new privacy legislation on registries.

Dr. Burt Chesworth, Senior Epidemiologist and Director of Data Operations and Research at the Ontario Joint Replacement Registry (OJRR) in the London Health Sciences Centre discussed an Ontario registry of data on waiting times, disease severity and surgery.

Dr. Bob Phillips, President and CEO, and Dr. Brent Zanke, Vice President, Tumour Bank of the Ontario Cancer Research Network (OCRN) reported on establishment of a Tumour Bank and the Ontario Cancer Research Ethics Board.

Ms. Lee Fairclough, Director, Regional Oncology Planning and Clinical Cancer Informatics at Princess Margaret Hospital and Dr. Aileen Davis, Senior Scientist at the Toronto Rehabilitation Institute and Principal Investigator of the Disability Evaluation in Extremity Sarcoma

Treatment described the Interdisciplinary Health Research Team (IHRT) in Musculoskeletal Neoplasia initiative and the national collaboration with a core database and tissue banking facility.

Dr. Steve Edworthy, rheumatologist at the University of Calgary, at the Canadian Network for Improved Outcomes in Systemic Lupus Erythematosus (CaNIOS) discussed the formation of a collaborative research network of rheumatologists and immunologists to improve the outcomes of patients with lupus.

Dr. Gilles Boire, rheumatologist at the Université de Sherbrooke described the Early Inflammatory Arthritis (EIA) initiative to link leaders of existing EIA and Early Rheumatoid Arthritis (ERA) cohorts in Montreal, Sherbrooke, Toronto and Winnipeg. The goal of the EIA is to develop a multi-centre Canadian cohort which shares a core set of standard data, biological samples and standard operating procedures.

Dr. Murray Baron, rheumatologist in Montreal discussed the initiatives of the Canadian Scleroderma Research Group (CSRG) which brings together rheumatologists with an interest in scleroderma with other disciplines including gastroenterology, respiratory, echocardiography, psychology, basic science. The CSRG's mandate is to create a longitudinal cohort of patients with scleroderma to enlarge the database for multiple research projects.

Dr. Rob Inman, rheumatologist in Toronto described the Spondyloarthritis Research Consortium of Canada (SPARCC) whose mandate is to improve outcomes in spondyloarthropathies through earlier diagnosis and treatment.

Dr. Ciaran Duffy, paediatric rheumatologist in Montreal discussed the

Juvenile Idiopathic Arthritis (JIA) initiative to follow a large cohort of newly diagnosed patients with JIA to determine clinical predictors and outcomes in JIA and determine the best health-related quality of life measure for use in this population.

Dr. Gillian Hawker, rheumatologist at Sunnybrook and Women's College Health Sciences Centre in Toronto reported on the Centre for Health Outcomes Research in Osteoarthritis and the challenges encountered in cross-institution data sharing and with linking a population based cohort to administrative data.

Dr. Walter Maksymowych, rheumatologist at the University of Alberta described the Rheumatoid Arthritis Pharmacovigilance Program and Outcomes Research in Therapeutics (RAPPORT), created to conduct pharmacosurveillance on biologics for effectiveness, long-term safety and cost-benefit.

Dr. Claire Bombardier, rheumatologist at the University Health Network in Toronto presented on behalf of Dr. Hani El-Gabalawy on the issues and challenges faced in the establishment of proteomic, genomic and tissue banking resources currently in place in Canada. She described the eRheum initiative: a web-based, patient self-report data capture and reporting application to allow clinicians and researchers to collect important data to improve the monitoring of patients in usual clinical practice and to participate more efficiently in clinical trials, surveillance studies and other quality assurance activities.

Dr. Les Castro of the University of Arizona's College of Medicine and Assistant Director of Research at the

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Canadian Arthritis
Network 2005 Annual
Scientific Conference
October 29 – 31, 2005



Plan to attend the Canadian Arthritis Network's 2005 Annual Scientific Conference in Gatineau, Quebec, at the Hilton Lac-Leamy, on the Ottawa River North Shore, four kilometres from the Parliament Buildings in Ottawa. **Register early to save up to \$250.**

Key dates are:

- **Deadline for early registration**
September 15
- **Deadline for application for travel awards for trainees**
September 15

Visit www.arthritisnetwork.ca to register.

Travel awards are available to graduate students and postdoctoral fellows involved in CAN research. Please visit the website for further information.

2005 Annual Scientific Conference Preliminary Program

SATURDAY, OCTOBER 29, 2005

- 7:00 a.m. **Registration and continental breakfast**
- 8:00 a.m. **Welcoming remarks and update on CAN**
Dr. Jane Aubin, Scientific Co-Director & CEO, Canadian Arthritis Network
- 8:20 a.m. **CAN Strategic Research Initiative - Osteoarthritis**
Chair: Dr. Mark Hurtig, University of Guelph, Guelph
- 8:25 a.m. **The epidemiology and natural history and prevention of knee injury and osteoarthritis**
Dr. Bert Mandelbaum, Santa Monica Orthopaedic and Sports Medicine Group, Santa Monica, USA
- 9:00 a.m. **Opportunities to use biomarkers to study disease activity in osteoarthritis**
Dr. Robin Poole, Shriners Hospital for Children, Montreal
- 9:30 a.m. **Advances in imaging: clinical application**
Dr. Charles Peterfy, Synarc, Inc., San Francisco, USA
- 10:10 a.m. **Break**
- 10:30 a.m. **Non pharmacological approaches to management of osteoarthritis**
Dr. Linda Li, Ottawa Health Research Institute, Ottawa
- 11:00 a.m. **Evolution of new therapies by integration of clinical studies and animal models**
Dr. Mark Hurtig, University of Guelph, Guelph
- 11:30 a.m. **Panel discussion – Towards further development of the Strategic Research Initiative in Osteoarthritis: how do we effectively integrate disciplines?**
Dr. Mark Hurtig, University of Guelph, Guelph
- 12:30 p.m. **Lunch**
- 1:30 p.m. **Poster presentations**
- 2:30 p.m. **CAN Strategic Research Initiative – Inflammatory Joint Diseases**
Chair: Dr. Hani El-Gabalawy, University of Manitoba, Winnipeg
- 2:35 p.m. **Discovery of a morphine-like substance in joints: so why is arthritis still painful?**
Dr. Jason McDougall, University of Calgary, Calgary
- 3:00 p.m. **How do we know what care people really receive? Strategies for evaluating care using administrative datasets**
Dr. Diane Lacaille, Arthritis Research Centre of Canada, Vancouver
- 3:25 p.m. **CD154/CD40 interaction and autoimmunity**
Dr. Walid Mourad, Université Laval, Quebec
- 3:50 p.m. **Break**
- 4:10 p.m. **Early arthritis cohorts: what we have learnt and where are we going?**
Dr. Shahin Walji, Mount Sinai Hospital, Toronto
- 4:30 p.m. **Mechanisms underlying bone loss in inflammatory arthritis**
Dr. Svetlana Komarova, McGill University, Montreal
- 4:50 p.m. **Advances in early intervention for inflammatory joint diseases**
Dr. Shahin Walji, Mount Sinai Hospital, Toronto

- 5:20 p.m. **Panel discussion – Towards developing a Strategic Research Initiative in Inflammatory Joint Diseases: How do we effectively integrate disciplines?**
Chair: Dr. Hani El-Gabalawy, University of Manitoba, Winnipeg
- 6:15 p.m. **Annual General Meeting**
- 6:45 p.m. **Wine and cheese, networking reception**

SUNDAY, OCTOBER 30, 2005

- 7:30 a.m. **Registration and continental breakfast**
- 8:00 a.m. **Workshop 1: Knowledge translation & exchange**
- 9:00 a.m. **CAN Strategic Research Initiative – Restoration of Joint Function**
Chair: Dr. Mike Buschmann, École Polytechnique, Montreal
- 9:05 a.m. **Current practice of cartilage repair for the reconstruction of joints**
Dr. Bert Mandelbaum, Santa Monica Orthopaedic and Sports Medicine Group, Santa Monica, USA
- 9:20 a.m. **State of the art biomaterials for cartilage repair**
Dr. Caroline Hoemann, École Polytechnique, Montreal
- 9:40 a.m. **The use of stem cell technology in cartilage repair**
Dr. Frank Barry, National University of Ireland, Galway, Ireland
- 10:20 a.m. **Bioengineered anterior cruciate ligament for the repair of the knee joint: pitfalls and strengths**
Dr. Francine Goulet, Hôpital de l'Enfant Jésus, Quebec
- 10:45 a.m. **Break**
- 11:00 a.m. **Use of micro-technology for *in vivo* management of joint environment**
Dr. Mehmet Toner, Harvard Medical School, Boston, USA
- 11:20 a.m. **The influence of exercise, attitudes and behaviours on rehabilitation and recovery after joint surgery**
Dr. Iris Weller, Sunnybrook and Women's College Health Sciences Centre, Toronto
- 11:50 a.m. **Panel discussion – Towards developing a Strategic Research Initiative in Restoration of Joint Function: how do we effectively integrate disciplines?**
Chair: Dr. Mike Buschmann, École Polytechnique, Montreal
- 12:50 p.m. **Lunch**
- 2:00 p.m. **Poster presentations**
- 3:00 p.m. **Workshop 2: Building relationships with partners**
Chair: Dr. Mike Lark, Centocor, Malvern, USA
- 3:00 p.m. **Networking event**
- to 6:00 p.m. Project group meetings
- 5:00 p.m. **Workshop 3: Career development for trainees**
Chair: Dr. Jeff Dixon, University of Western Ontario, London
- 6:30 p.m. **Banquet dinner**

MONDAY, OCTOBER 31, 2005

- 7:30 a.m. **Registration and breakfast**
- 8:30 a.m. **Workshop 4: New member/trainee orientation**
- 9:30 a.m. **Workshop 5: Consumer participation and integration in CAN research**
Chair: Ms. Jay Fiddler, Consumer Advisory Council, Vancouver
- 10:30 a.m. **Use of *in vivo* models for development of therapeutics in arthritis**
Speaker TBD
- 11:00 a.m. **CAN's Strategic Research Resources**
- 11:15 a.m. **Break**
- 11:45 a.m. **Closing remarks**



CANADIAN ARTHRITIS NETWORK | LE RÉSEAU CANADIEN DE L'ARTHRITE

CAREER OPPORTUNITY

Director of Research & Development

The Canadian Arthritis Network supports arthritis R&D, facilitates the commercialization of its members' discoveries and is training the next generation of arthritis scientists. The Network is funded by the federal government through the Networks of Centres of Excellence.

The Director of Research & Development provides scientific leadership for our R&D strategy, identifies the commercial potential of knowledge generated by Network-funded research, and facilitates patent applications and licensing agreements.

Candidates will have a doctoral degree related to arthritis R&D and a minimum of two years post-doctoral research in academia or industry. Experience in an Industry Liaison Office, biotechnology licensing and fluency in English and French would be valuable assets. Excellent project management capabilities and the ability to work in a fast-paced, small team environment are essential.

For more information visit our website at www.arthritisnetwork.ca/employment_opportunities.asp

Respond to resumeshrsource@rogers.com or fax your resume to **905-821-1237**. ■

CAN members in the news

CONGRATULATIONS TO the four CAN investigators who were recognized by the Canadian Institutes of Health Research's Institute of Musculoskeletal Health and Arthritis (IMHA) for their efforts to eradicate the pain, suffering and disability caused by musculoskeletal, oral and skin disorders. The following received IMHA's Quality of Life Research Awards:

Dr. Jeff Dixon and his team at the University of Western Ontario are examining the ways in which extracellular nucleotides act through P2 nucleotide receptors to regulate the activity of osteoclasts (cells that remove bone) and osteoblasts (cells that form bone). This work may result in the development of new drugs to prevent removal and promote formation of bone in osteoporosis and inflammatory bone diseases.

Dr. Graham King and Dr. Jim Johnson have established a comprehensive program to study motion and stability of the elbow and forearm at the University of Western Ontario. Using their upper limb testing device, they are evaluating common soft-tissue and bone disease and reconstructive procedures of the elbow not completely understood. The results of their work should contribute to an improved understanding of disorders of the upper limb leading to more effective patient treatments.

Dr. James Wright from the Hospital for Sick Children in Toronto is examining how a patient's gender affects a physician's decision-making behavior. In so doing, men and women with comparable levels of arthritis will be sent to physicians to establish their recommendations for total knee arthroplasty. This study will provide the information necessary to design and test strategies to improve the delivery of total joint arthroplasty.

Congratulations to the 21 Network investigators who recently received CIHR awards as principal investigators or co-applicants. CAN is proud of its trainees who were recognized by the Canadian Institutes of Health Research (CIHR) and the Natural Sciences and Engineering Research Council of Canada (NSERC). Dr. Sasha Bernatsky received a CIHR New Investigator Award for a multi-centre nested cases-control study of immunosuppressive agents and malignancy in system lupus erythematosus. Hugues Allard Chamard received an NSERC postgraduate scholarship to study toward a master's degree in cellular biology. ■

Informatics & Ethics

Continued from page 7

Arizona Arthritis Center in Tucson described the Outcomes Research Management Information System (ORMIS), an electronic data capture system to collect information in real time to monitor patient progress, identify best clinical practices and generate and test hypotheses.

Ms. Joanne Goldberg, Director of Clinical Site Network Management of GEREQ in Quebec City described the GEREQ initiative to promote clinical research through the development of a clinical data management system, training

programs and an operational network of accredited centres.

The presentations were followed by facilitated round-table discussions on the creation of CAN's Informatics & Ethics Strategic Research Resource and the establishment of its priorities:

- Information Resource – standardized outcome measures, non-standardized variables for standard operating procedures and good clinical practice, description of administrative databases, sharing of expertise and experience, mentoring, licenses, etc.
- Training Provision – good clinical practice, privacy and ethics, project management, etc.



CANADIAN
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Today's arthritis research :: Tomorrow's cure

The Canadian Arthritis Network links researchers, clinicians, academia, The Arthritis Society, the Canadian Institutes of Health Research's Institute of Musculoskeletal Health and Arthritis, pharmaceutical and biotechnology companies, and government. The Network is a not-for-profit organization, funded by the Government of Canada's Networks of Centres of Excellence to support arthritis research and development and to facilitate the commercialization of its members' discoveries.

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Member of the Networks of
Centres of Excellence

- Advocacy – lobby provincial and federal governments (e.g., legal constraints on research such as the right to collect health card numbers), development of partnership linkages, etc.

Proceedings of the workshop will be available later this year. The Informatics & Ethics Strategic Research Resource (I&E SRR) workshop planning committee prepared an operational plan for the Resource. I&E SRR services are available to CAN investigators and other researchers. For more information, please contact Johnathan Riley at 416-586-3167 or at jriley@arthritisnetwork.ca ■