



CANADIAN
ARTHRITIS
NETWORK | LE RÉSEAU
CANADIEN
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JOINT VENTURES

The Canadian Arthritis Network's Industry Newsletter

Getting a foot in the arthritis laboratory

Many people define the turning point of their careers as landing that first major professional posting.

FOR CANADIAN RESEARCHERS, this important watershed is often marked by their appointment to an academic institution. Unfortunately, some individuals never achieve this goal, while others are forced to leave Canada to seek positions elsewhere.

The Canadian Arthritis Network (CAN) is now offering these aspiring investigators an opportunity to overcome this challenge. Through a joint program with The Arthritis Society, the CAN scholarship provides 50 percent of a researcher's salary for three years. By assuring institutions of the qualifications of these scholars, as well as making it financially attractive to employ them, this program is a major step toward introducing new talent into the Canadian arthritis research community.

More specifically, says University of Western Ontario physiologist Jeff Dixon, these CAN scholars are becoming part of a critical mass of researchers working on problems of joint diseases.

"We're investing in the future," says Dixon, the CAN member who chairs the committee administering the scholarship initiative. "We're presenting them with a career path. This program encourages these young scientists to work in areas relevant to arthritis and relevant



From left to right – CAN Network scholarship award recipients Maria Fernandes and Fawzi Aoudjit, and prior CAN Network scholarship award recipient Marc Pouillot at the Centre de Hospitalier de l'Université de Laval (CHUL), where they each received an appointment through matched funding from Laval University.

to the goals of the Network."

In fact, since the program was launched in 1999, it has made it possible for six such scientists to reach this milestone in Canada. Dixon notes that the terms of the scholarship specify that award holders must spend 75 percent of their time doing research, further enhancing the benefits for newer academics who sometimes find it difficult to free up this amount of time from clinical or teaching responsibilities. And those benefits also extend to the participating institutions, which find themselves able to increase the diversity and volume of research

they can undertake.

But the welcome is probably never more enthusiastic and heartfelt than when it comes from the scholars themselves. At Laval University in Quebec City, for example, CAN Scholar Dr. Maria Fernandes regards this opportunity as nothing less than vital to her future.

"This program is extremely important for new investigators, like myself, who are trying to establish themselves," she says. "It's encouraging that there is funding in this area, so we know that we can

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International collaboration to further OA research

THE UNIQUE SKILLS OF THE multidisciplinary membership of the Canadian Arthritis Network have attracted a cutting-edge international research collaboration to Canada. Aventis Pharma Deutschland is working with a team of CAN researchers to further the characterization of an OA pre-clinical research model.

Among many things, this will enable novel intra-articular therapies for arthritis to be tested, providing a faster, more specific alternative to the traditional oral route.

“We are convinced that being part of

this Network will help us to discover and develop novel therapies for osteoarthritis much faster and more efficiently,” explains Dr. Karl Rudolphi, section head pharmacology of the osteoarthritis disease group at Aventis Pharma Deutschland.

“In the future only scientific networks like CAN will be able to cope with the continuously increasing complexity in medical science and drive the progress in a timely fashion. Our partnership with an osteoarthritis genomic program sponsored by the German government has demonstrated the value of research networks.”

The project involves the expertise of a veterinarian, a basic scientist and a pathologist.

Together, they are furthering the histological analysis of the pre-clinical model, introducing new gradings, analyzing cartilage degeneration and applying biomarkers.

These steps enable the model to provide more information about the potential of new therapies.

“This is the added value of CAN research,” explains CAN scientific director Dr. Robin Poole. “The clustering of diverse disciplines around the model acts

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concentrate on arthritis.”

Her own field of inquiry is the subject of inflammation, and new strategies for treating arthritis by starving affected tissue of its blood supply. This approach could yield an entirely new means of dealing with chronic conditions such as rheumatoid arthritis, but only if dedicated researchers such as Fernandes are given a chance to develop their ideas and put them into practice.

“We need this support,” she concludes. “And it’s very reassuring to know that somebody is helping you out at the very beginning of your career.”

And participating institutions express their own appreciation for this kind of assistance. Luc Trahan, Laval’s associate vice-rector, research, notes that the three CAN scholars contribute significantly to his university’s research capacity in arthritis.

“Not only does such a program provide a significant part of the salary of the new investigators at the beginning of their career, but it offers them the opportunity to establish themselves as independent researchers, as well as to collaborate through the Network with other researchers in the field,” he says. “These collaborations often result in faster research progress.” ■

Current CAN trainees

Award	Candidate	Supervisor	Co-sponsor
Graduate	Danika Batiste	Dr. Sandy Kirkley	Enhanced Vision Systems Corp.
Graduate	Karen Berg	Dr. Kathy Siminovitch	Mount Sinai Hospital Foundation
Graduate	Anik Chevrier	Dr. Mike Buschmann	Biomep Inc.
Graduate	John Choe	Dr. Tony Cruz	Transition Therapeutics Inc.
Graduate	Vanessa Kung	Dr. Jane Aubin	University of Toronto
Graduate	Allen Lehman	Dr. John Esdaile	Arthritis Research Centre of Canada
Graduate	Linda Li	Dr. Claire Bombardier	Merck Frosst Canada & Co.
Graduate	James Pencharez	Dr. Claire Bombardier	Merck Frosst Canada & Co.
Graduate	Patrick Smith	Dr. Tassos Anastassiades	Genzyme Biosurgery, Farnam Industries and Anacoti Ltd.
Graduate	Eric Tam	Dr. Chris Overall	University of British Columbia
Graduate	Marc Thibault	Dr. Mike Buschmann	Biosyntech Inc.
Graduate	Gabrielle Tiraloche	Dr. Sheila Laverty	ClinTrials BioResearch
Fellowship	Dr. Sasha Bernatsky	Dr. Ann Clarke	Montreal General Hospital, Singer Family Lupus Research Fund
Fellowship	Dr. Humphrey Ehigator	Dr. Chaim Birnboim	The Ottawa Health Research Institute
Fellowship	Dr. Xuecui Guo	Dr. John Schrader	Industry Initiatives Fund, Biomedical Research Centre, UBC
Fellowship	Dr. Bin Wang	Dr. John Schrader	ImmGenics Pharmaceuticals Inc.
Scholarship	Dr. Fawzi Aoudjit		Centre de Recherche du CHUL, Laval University
Scholarship	Dr. Debbie Feldman		University of Montreal
Scholarship	Dr. Maria Fernandes		Centre de Recherche du CHUL, Laval University
Scholarship	Dr. Sara Townsend		Biomedical Research Centre, UBC

The Canadian Arthritis Network wants to attract the best and brightest students and fellows to arthritis research and development in Canada. For more information about graduate student award, post-doctoral fellowship award, Network scholarship award, core facility training award and training rotations, visit www.arthritisnetwork.ca

DR. STEFAN LOHMANDER was one of several outstanding keynote speakers organized for the CAN annual conference 2001. CAN thanks him for sharing his presentation with us in *JointVentures*.



This year, from September 26 to 28, you'll have another opportunity to participate in an outstanding arthritis research forum. Join us in Calgary for the CAN annual conference 2002.

Key information link: www.arthritisnetwork.ca

Molecular markers in osteoarthritis

The effectiveness of clinical trials for osteoarthritis therapies have traditionally been hampered by the difficulty of identifying patients whose conditions are more likely to worsen, and by the inability to measure the efficacy of any disease-modifying therapy.

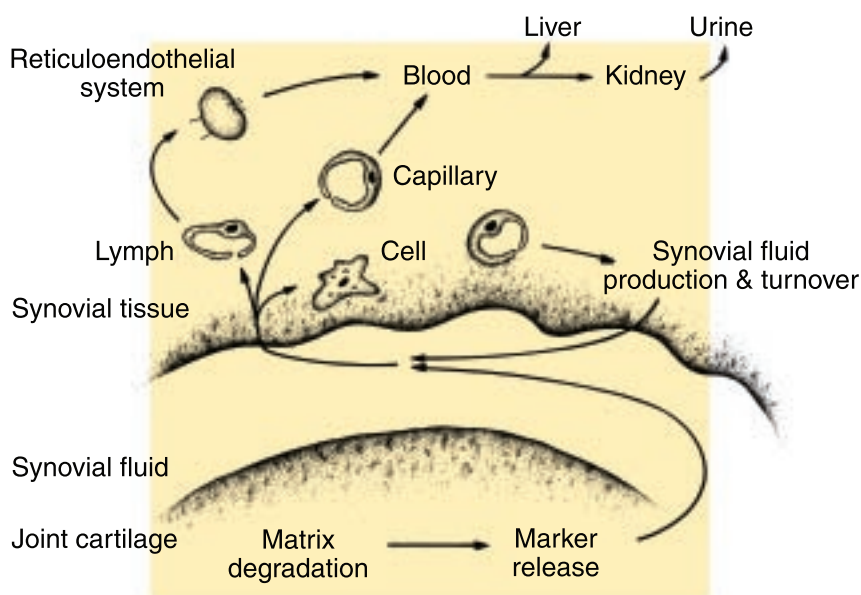
PROFESSOR STEFAN LOHMANDER, of the Department of Orthopedics at the University Hospital in Lund, Sweden, explains his investigations into biomarkers – the biological by-products of joint degeneration – have revealed a practical means of measuring the development of osteoarthritis (OA) and the effectiveness of treatment.

His studies of molecular markers of OA in people with recent joint injuries, demonstrate that the OA disease process begins soon after joint injury. This suggests that early detection and intervention is most effective for the treatment of OA.

Using the post-injury knee to study biomarkers, this research has found increased joint fluid concentrations of proteases and of fragments of cartilage, proteoglycan and collagen. The knee makes a convenient model for such work, since injuries to it are relatively common, it can be studied through magnetic resonance imaging, and fluid can be readily obtained from the joint.

Lohmander suggests these markers could make it possible to select individuals at high risk for OA who could take part in early trials of potential therapies. Although such work is not under way right now, he speculates that it could begin within a couple of years.

Although data suggests molecular markers in joint fluid, serum and urine



Biomarkers – biological by-products of joint degeneration.

vary within the same patient, this is likely an indication of changes in a patient's condition. Moreover, this variability is less than the variability between patients.

Such information is crucial to providing the cohorts, markers and compartments that make it possible to plan clinical trials. For example, calculations for one joint fluid marker suggest that approximately 30 patients per treatment would be needed to show a change of 0.5 SD with 80 percent power.

Other investigations, which have been

carried out by Lohmander as well as groups working in other countries, have revealed the relationship between the molecular mechanisms and dynamics of cartilage matrix turnover in OA.

Ultimately, he concludes, the utility of this approach will be demonstrated by the availability of treatments that can change the progression of the disease. He anticipates the next major step to be trials with these 'true' OA disease-modifying agents, whose effectiveness will in turn validate the value of these biomarkers. ■

New scientific director

Dr. Robin Poole, director of the Joint Diseases Laboratory at Montreal's Shriners Hospitals for Children, has been appointed as scientific director for the Canadian Arthritis Network (CAN).



THIS NEW ROLE evolved from CAN's current organizational renewal. Robin is responsible for overseeing the direction of CAN's research program. Business

and day-to-day operations are led by Chris Nelson, who was recently appointed as president and CEO.

"Through integrated multi-disciplinary research and development, CAN is creating a world free of arthritis," explains Robin, who has been involved with CAN since its inception. "I believe in this Network. It is a great honour to continue to serve CAN in this new position."

In his previous role as CAN associate program director, Robin has given a tremendous amount of energy to the program behind the scenes. His passion for CAN and arthritis research is constantly evident.

"It is an exciting time for arthritis research," notes Robin. "The recent creation of the CIHR Institute of Musculoskeletal Health and Arthritis

and the tremendous support we receive from The Arthritis Society offer exciting opportunities for all our organizations to expand their mandates and work together for all those who suffer from arthritis."

CAN was previously under the direction of Dr. Tony Cruz, who has resigned from his role as CAN program director

to fulfill new responsibilities to shareholders for Transitions Therapeutics, a company he has founded.

Robin explains, "Tony made CAN possible and his contributions have been enormous. We thank him for everything he has given us and wish

him every success in the future."

Tony is continuing to participate in the Network, as a member of the board of directors, a member of the commercialization and business development committee, and as a CAN member.

"Working together with such an outstanding team to make our innovative idea a reality has been the opportunity of a lifetime," concludes Tony. "Robin is the ideal person to lead us through our grant renewal." ■

"Through integrated multi-disciplinary research and development, CAN is creating a world free of arthritis."

International collaboration

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like a spring board, bringing discoveries from pre-clinical stages to application."

The development of new diagnostic imaging methods in other ongoing CAN research projects, have the potential to characterize this model even further.

As Rudolphi explains, "There are many diverse experimental animals models of osteoarthritis in use both in pharmaceu-

tical and basic research but most of them require additional validation and standardization."

Other key doors opened by improving the characterization of the pre-clinical model, includes decreasing the time often involved to complete clinical trials by allowing potential therapies to be tested across different laboratories.

Key link: German osteoarthritis genomic program www.leitprojekt-oa.de ■



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Chris Nelson
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CAN Member

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Tineke Meijers, Ph.D.
Executive Director of Research and Development

Robin Poole, Ph.D., D.Sc.
Scientific Director

Johnathan M. Riley, MHA
Director of Information, Research and Analysis

Canadian Arthritis Network

250 Dundas Street West
Suite 402

Toronto, ON M5T 2Z5
Tel: 416-586-4770
Fax: 416-586-8395

E-mail: can@mtsina.on.ca
www.arthritisnetwork.ca

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