

Your gateway to arthritis research and development in Canada





It is with deep sadness that we mourn the untimely death of Dr. Alexandra Kirkley, a member of the Canadian Arthritis Network. Dr. Kirkley was an orthopedic surgeon and researcher at the University of Western Ontario, whose collaborative spirit modelled the ideals that the Canadian Arthritis Network is striving to achieve. She was a marvellous teacher and researcher and we will miss her.

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The Canadian Arthritis Network

The Canadian Arthritis Network (CAN) is a not-for-profit organization dedicated to creating a world free of arthritis through integrated trans-disciplinary research and development (R&D). Its mission is to translate R&D into advances that will have a positive impact on the quality of life for people with arthritis.

CAN is a single point of contact that links leading Canadian arthritis researchers and clinicians, Canadian academic institutions, The Arthritis Society, pharmaceutical and biotechnology companies, government and many of Canada's brightest new arthritis researchers.

The Network acts as a facilitator in bringing scientific discoveries to market by providing access to cutting-edge techniques for product development and evaluation.

CAN's trainee program is creating the next generation of scientists and researchers who will collaborate and continue the work towards a cure for arthritis.

For people with arthritis, the Network offers the hope of a life free from pain and disability. CAN's Consumer Advisory Council, comprised of people with arthritis, actively participates in decision-making on CAN's management committee and the peer review process for funding research and training.

CAN is funded by the federal Networks of Centres of Excellence (NCE), Canada's flagship science and technology program.

For more information, please visit our Web site at www.arthritisnetwork.ca

From the Chair of the Board, Scientific Director, and President and CEO

In 2001 – 2002 the Canadian Arthritis Network successfully completed its Networks of Centres of Excellence mid-term review, conducted by an international panel of experts, and secured \$11 million in federal funding until 2005. As our Network matures, we find ourselves addressing issues very different from those facing an organization that is just starting out. Expectations are higher and the more successful we become, the greater the challenge of maintaining that level of success. It's hard work but it's the kind of hard work that brings out the best in professional people.

Over the past year, CAN has restructured itself to better meet the challenges of the future. The restructured Network has now had a full year of operation with the new president and CEO who manages the administration and business development functions and the new scientific director, whose focus is on research and development. As part of organizational renewal, processes and committee mandates were modified to be more responsive to opportunities that arise, to members' needs, and to stakeholders. This realignment of responsibilities has already demonstrated its value.

In April of this year, Dr. Robin Poole, of the Shriners Hospital for Children and McGill University, our new scientific director, with insight from the Scientific and Medical Advisory Council, championed the Osteoarthritis Consensus Conference. Dr. Poole and the Conference planning committee were able to bring national stakeholders together to determine the future direction of osteoarthritis research in Canada.

Canadian and international experts joined representatives of global pharmaceutical and biotechnology companies for an information sharing session that identified the future priorities for osteoarthritis research.

Significant consumer involvement in every segment of the Conference was hailed as a model for other areas of research. This Conference is a good example of how CAN will work with The Arthritis Society (TAS) and the Canadian Institutes for Health Research's (CIHR) Institute of Musculoskeletal Health and Arthritis (IMHA) in developing a national arthritis strategy.

We welcome the appointment of Dr. Jane Aubin, of the University of Toronto, as associate scientific director and chair of the Management Committee. Her role as associate scientific director is to work with Dr. Poole and the R&D Committee to ensure its strategic direction is consistent with the current demand for scientific research and development in arthritis.

To increase the transparency and efficiency of our grant application and peer review process, CAN is currently implementing ProGrid®, a sophisticated, automated system that will enable us to track and measure the progress and outcomes of CAN-funded grants. In addition, it will assist us in identifying research projects with the greatest value, including commercial potential, and to demonstrate the overall excellence of our research portfolio.

We are supporting the creation of an unprecedented alliance among Canadian rheumatologists conducting clinical trials, working in universities, hospitals, rheumatic disease units, and in private practice. Once this alliance is up and running, Canada will be positioned to offer pharmaceutical and biotechnology companies bench to bedside drug development services in arthritis. This unique offering will create collaborative opportunities for all members of the Canadian clinical research community.

In the area of technology exploitation, CAN assisted Dr. Tassos Anastassiades of Queen's University in commercializing his scientific discovery, a glucosamine derivative, which will be initially used in the treatment of animals with cartilage degeneration. CAN facilitated the successful patent application by Dr. Anastassiades and the licensing agreement with Farnam Companies Inc., an American manufacturer of veterinary products. CAN and Dr. Anastassiades are developing a strategy to set the stage for using his compound for the treatment of people with arthritis.

The development of our pre-clinical services allowed CAN to enter into an agreement with Aventis to study early molecular and biochemical changes in osteoarthritis. This will provide a validated tool for use in the development of drugs to treat osteoarthritis. CAN continues to support and offer state of the art technologies for drug candidate screening.

We are helping to shape the arthritis research environment, bringing people and institutions together in a unique way. CAN is a clearinghouse for information and ideas and is developing research talent. We are providing more value to our members than just another source of funding.

In the past year, the number of either partially or fully CAN-funded trainees increased by 20 per cent to 250. This demonstrates CAN's dedication to recruiting and retaining highly qualified personnel.

As we move forward we are focusing our attention and resources on preparing a submission to the NCE for a second cycle of funding that will enable us to continue our important work. We are doing this with the collaboration of our members, partners and other stakeholders.



Sydney Jackson, Chair of the Board



Dr. Robin Poole, Scientific Director



Chris Nelson, President and CEO

Goals

The Canadian Arthritis Network is forging a new culture in the world of arthritis research and development. CAN is involving scientists, clinicians, consumers, industry and government in its network to focus on a trans-disciplinary approach to providing innovative knowledge-based services and developing new diagnostic and therapeutic technologies. CAN's unique collaborative work style and focus on translational R&D distinguish it from other funding organizations.

The pre-requisites for success for the Network are an outstanding R&D infrastructure, a portfolio of core services, international networks and partnerships, and a compelling public image. CAN continues to develop strategies to ensure each of these elements is in place and that the Network is supporting its members as effectively as possible.

To realize its vision of a world free of pain and disability caused by arthritis, CAN must have secure funding in place. CAN is optimizing its funding potential through strategies that include reviewing R&D grants for their potential commercial opportunities.

CAN is building an R&D infrastructure that will enable it to fulfill its unique role in the R&D landscape. The infrastructure will focus on areas of unmet needs and on areas that are ripe for scientific breakthroughs. The possibilities will be limited only by the critical mass of researchers available to focus on the problem. In keeping with the CAN mission, each specific option will require the support of industry and government partners.

Specialized knowledge and skills are necessary to effectively implement the R&D strategy. Although the Network's membership is extensive and has attracted the most talented researchers in Canada, CAN is undergoing membership renewal to broaden its capacity and ensure it has the right mix of knowledge, skills and abilities to meet the challenges of the future.

The Network is continuing to provide centralized access to the full gamut of services to enhance translation of basic research to clinical applications in a timely manner, using cutting-edge technologies.

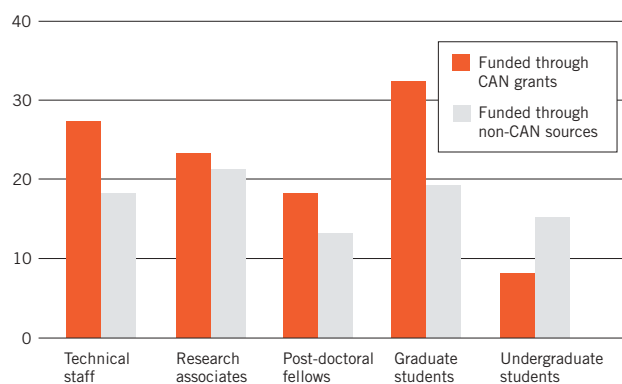
CAN is expanding its partnerships and international networks. The Network is currently seeking training, research and business opportunities with ClinTrials BioResearch Inc., of Senneville, Quebec, Aventis Pharma Deutschland of Germany, the German Rheumatology Competence Network, and TNO Prevention and Health of The Netherlands.

CAN will be successful only if people in the research community are aware of its existence and its services. CAN will reach out to communicate with stakeholders and the public, to make them aware of its successes and the resources it offers. The development of a compelling public image will enhance CAN's ability to attract members, partners, and income.

Training

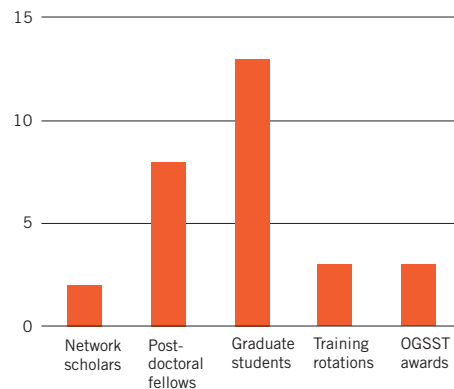
The Canadian Arthritis Network's innovative training programs help develop highly qualified personnel in the area of arthritis research. It offers unique opportunities for undergraduate, graduate and post-graduate students, technicians and research associates, to gain experience in translational research, ensuring that they have the capabilities essential for careers at the cutting edge of arthritis research and development. In this fiscal year 250 individuals collaborated on CAN research projects.

Highly qualified personnel (HQP) working on CAN-funded projects fiscal 2001 – 2002



Through generous financial contributions from TAS and other partners, CAN also offers salary awards to outstanding students, post-doctoral fellows and new investigators committed to arthritis research.

Training awards granted in fiscal 2001 – 2002



CAN is often the first source of funding for these trainees. Through Network activities they are exposed to exciting research opportunities and many are subsequently able to obtain funding from TAS or CIHR to pursue careers in arthritis research and development.

The integrated approach to research and development that is CAN's hallmark provides trainees with a unique environment where they learn the value of working with experts in other disciplines. Exposure to trans-disciplinary research sparks ideas and generates new projects that advance CAN's goal of developing innovative diagnostic and therapeutic technologies. Such exposure also helps create a new culture of scientific research. Trainees are invited to theme meetings and the annual conference, which includes career development workshops. Trainees also have the opportunity to participate in a training rotation program that provides funds to visit other laboratories to learn new techniques.

CAN is currently exploring international opportunities with research organizations in France and Germany that would involve the exchange of trainees.

The focus of CAN's training program is not only on students in traditional biomedical and clinical disciplines, but includes those studying health services and population health and related disciplines such as physiotherapy and veterinary medicine.

The number of trainees is continuing to grow with CAN's bi-annual training awards competition. The value of CAN grants is leveraged with matching funds from institutions, industry, and provincial funding sources. A good example is the Ontario Graduate Scholarships in Science and Technology (OGSST) program, which provides 2:1 matching funds to support outstanding CAN graduate trainees.

The success of CAN's training program is best demonstrated by the careers of its trainees. Two recent trainees, who were recipients of CAN Network Scholarships, are now conducting their own research. Dr. Marc Pouliot, funded by CIHR, is currently doing research on inflammation at the Centre hospitalier de l'Université Laval (CHUL) in Quebec City. Dr. Diane Lacaille, a rheumatologist at the Arthritis Research Centre in Vancouver, received funding from CIHR and TAS to develop and pilot a test program to prevent work disability in people with arthritis.

Research and Development

The Canadian Arthritis Network is an organization dedicated to research into the causes, treatment, management, and ultimately, a cure for arthritis. CAN is funded by the federal Networks of Centres of Excellence, whose goal is to mobilize Canada's research talent and apply it to developing the economy and improving the quality of life of Canadians.

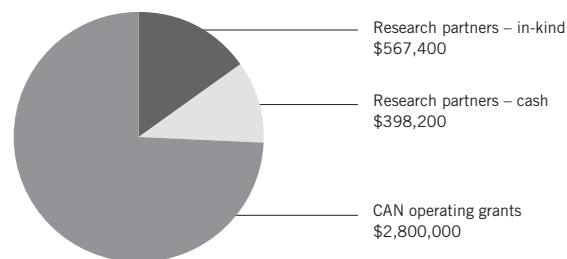
CAN's R&D program is a unique approach to research with its focus on national trans-disciplinary teams. CAN acts as a catalyst, bringing scientists and clinicians from different fields together on a project that allows them to share ideas and develop novel methods to study the cause of arthritis and how to alleviate its pain and disability.

The trans-disciplinary approach offers a faster path to a solution than the traditional method of researchers pursuing their initiatives independently. Bringing scientists and clinicians with different specialties into contact with each other also creates the possibility of cross-fertilization of ideas that leads to new discoveries and the ability to solve problems that individual expertise cannot manage. The scientists who join the projects form a network and bring their knowledge and experience as well as that of their institutions to their research.

By bringing together researchers from a variety of disciplines, CAN is able to offer a bench to bedside approach to its members, government and industry. Project partners have access to the expertise of the whole network. For example, a partner working on a basic science discovery can work with CAN to speed the implementation of the discovery for the patient, with CAN providing opportunities for pre-clinical and clinical trials.

In 2001 – 2002, CAN funded 51 projects totaling almost \$2.8 million. In securing the participation of 24 partners for these projects, CAN was able to attract a further investment of \$965,600. The partners provided both cash and in-kind contributions.

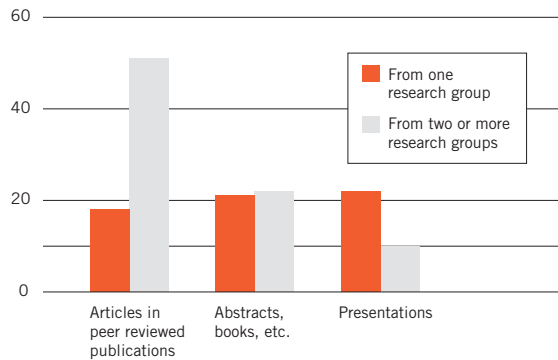
Total research funding (NCE and non-NCE Funds)



CAN supports trans-disciplinary networking opportunities, where the cross-fertilization of ideas takes place among members and trainees. The exchange of information at these events provides members with collaborative research opportunities to extend their basic work to clinical application in the care of the arthritic patient. This sparks the development of new research projects that take advantage of the wide array of skills and expertise in the Network. Many people who work in different disciplines and in different locations, who would not normally meet each other, participate in projects that are funded by CAN.

The excellence of CAN-supported research is seen in the number of papers published in peer-reviewed scientific journals, abstracts and talks delivered during the year. CAN is pro-active in knowledge transfer and the dissemination of information. It moves quickly to deliver any information made available by current research and ensures that value created reaches the right audience.

Dissemination of NCE Funded Research Results and Network Collaborations



CAN supports its members in developing and protecting intellectual property. It facilitates the patent process for new discoveries and finds the right partners to exploit commercial opportunities. In 2001 – 2002, CAN members filed six patent applications. One patent was issued, one copyright was issued, one license was granted to industry and one license was under negotiation.

The benefit of belonging to the Network and in sharing experience is demonstrated by the creation of a new approach to osteoarthritis research. At a retreat held by CAN, discussions took place with The Arthritis Society and the Canadian Institutes of Health Research's Institute for Musculoskeletal Health. The participants decided to hold an Osteoarthritis Consensus Conference in April 2002. Sponsored by CAN, TAS, IMHA, and 19 industry partners, the Conference brought together over 200 leading medical researchers, clinicians, allied health professionals, policy makers and people with arthritis.

This was the first Canadian conference of its kind: a high-level brainstorming session to determine the future direction and priorities of osteoarthritis research in Canada. The Conference also created a medical first in Canada, namely a national arthritis program, in which CAN, TAS, and IMHA are the principal partners. The top priorities for OA were identified at the Conference and CAN is now addressing them in partnership with TAS and IMHA in future research programs.

CAN has funded projects that are using the trans-disciplinary approach it advocates to achieve great progress in a relatively short period of time. The following projects demonstrate CAN's approach.

Elizabeth Badley, working at the Arthritis Community Research and Evaluation Unit, in Toronto, is investigating a way to understand and measure the progression of osteoarthritis from early to later stages that will help in the development of new therapies. Dr. Badley and her colleagues are looking at biological markers and magnetic resonance imaging (MRI) to evaluate the progression of disease, identify markers of disability in people who show very early symptoms, and develop a model to show the course of disabling arthritis in a specific group of people who reported severe hip or knee arthritis in a survey that began in 1995. The research will look at the course of osteoarthritis from a person's functional perspective.

Dr. Badley is a specialist in epidemiology, who does research on population health, chronic conditions, and musculoskeletal disorders. Partnering with industry, she gathered a team of co-principal investigators and collaborators that includes a rheumatologist, a biostatistician, a social psychologist, a clinical immunologist, a specialist in the prognosis, treatment, outcome and economic costs of disease, and a specialist in the study of cartilage damage and repair in arthritis. The trans-disciplinary team members work in Vancouver, Toronto and Montreal.

Jacek Kopec, of the Arthritis Research Centre in Vancouver, received a CAN grant to develop a questionnaire for multi-level adaptive assessment of health related quality of life. Dr. Kopec is an epidemiologist who specializes in health status, disability, and quality of life assessment. The project will yield practical benefits as well as possible commercial applications. Measurement of health-related quality of life is used in health technology assessment, in evaluating new health programs and interventions, and in developing and testing new drugs and devices.

The investigative team includes experts in clinical aspects of arthritis, epidemiology, measures of health related quality of life, physiotherapy, health economics, statistics, and health services research. The work is being carried out in Vancouver, Toronto and Montreal.

Diane Lacaille, of the Arthritis Research Centre in Vancouver, is a rheumatologist who received a CAN grant to develop a population-based registry of rheumatoid arthritis for the Province of British Columbia. Information from the registry will be used in the development of health care policies.

Dr. Lacaille has assembled a team that includes an expert in epidemiology and clinical research and a health economist, who works with computer programmers, IT technical staff, and statistical analysts.

David Holdsworth, of the J.P. Robarts Research Institute at the University of Western Ontario, in London, is the principal investigator of a project that received a CAN grant to develop a standardized animal model to observe and follow the progression of osteoarthritis in living animals that can be used by other investigators who are developing pharmacological therapies. The project team is using non-destructive 3D imaging techniques to detect early disease and to follow its

progression. Imaging technologies that are being used in combination with biomarkers in this project include quantitative computed micro-tomography, MRI, ultrasound and biomicroscopy.

The project is being carried out at four sites with the expertise in: veterinary surgery in Montreal; computed tomography and MRI in London; ultrasound in Toronto; and advanced image analysis techniques in Hamilton.

Jane Aubin, of the University of Toronto, an expert in cellular and molecular biology, received a CAN grant to study the role of an estrogen receptor related orphan receptor in the development of bone and cartilage. Dr. Aubin is working with team members at the University of Western Ontario. A patent has been submitted for the estrogen receptor related α as a regulator of bone formation. A provisional patent has been filed to look at the effect of the orphan receptor on cartilage formation. A venture capital company has been a partner in the project, which has also attracted the interest of US companies.

CAN is proud of its accomplishments to date and continues its drive towards the creation of a world free of arthritis.

Scientific Program and Partners

(Principal investigators in bold type)

THEME: GENETICS			
Leaders: Frank Jirik, Kathy Siminovitsh			
Project Title	Investigators	Institutions	Corporate Partners
Analysis of extracellular matrix molecule mutations in individuals with Ehlers-Danlos syndromes	Bill Cole	The Hospital for Sick Children	
	Peter Roughley	Shriners Hospital for Children	
Comparative genomics of pufferfish metalloproteinase gene promoters and functional analysis in transgenic frogs	Frank Jirik	University of Calgary	
Genetic studies in rheumatoid arthritis	Kathy Siminovitsh	Mount Sinai Hospital	
	Frank Jirik	University of Calgary	
	Tom Hudson	Montreal General Hospital	
THEME: INFLAMMATION			
Leaders: Chris McCulloch, Walid Mourad			
Project Title	Investigators	Institutions	Corporate Partners
IL-1 signalling through focal adhesions	Chris McCulloch	University of Toronto	Transition Therapeutics
	Jaro Sodek	University of Toronto	
	Chris Overall	University of British Columbia	
	Tony Cruz	Mount Sinai Hospital	
Intracellular peptides as inhibitors of neutrophil recruitment and responses to IL-8	Paul Naccache	Centre hospitalier de l'Université Laval	
Anti-inflammatory chemokine antagonists for treating arthritis	Chris Overall	University of British Columbia	
The role of DDR2 receptor tyrosine kinase in RA	Ian Clark-Lewis	University of British Columbia	
	Chris McCulloch	University of Toronto	
	Rob Rottapel	University Health Network	
Towards the development of new anti-cytokine pharmacotherapy	Tony Pawson	Mount Sinai Hospital	
	John DiBattista	Royal Victoria Hospital	
Lipid mediators of inflammation: characterization of the anti-inflammatory actions of prostaglandin E2 and evaluation of metabolic stable PGE2 mimetics in animal models of inflammation of arthritis	Pierre Borgeat	Centre hospitalier de l'Université Laval	
	John DiBattista	Royal Victoria Hospital	
	Walid Mourad	Centre hospitalier de l'Université Laval	
	Patrice Poubelle	Université Laval	
	Marc Pouliot	Université Laval	
THEME: CELLULAR AND MOLECULAR BIOLOGY OF JOINT TISSUES			
Leaders: Jeff Dixon, Janet Henderson			
Project Title	Investigators	Institutions	Corporate Partners
Coordinated signalling by growth factors in cartilage and bone development and regeneration	Janet Henderson	Royal Victoria Hospital	Ciblix
	David Goltzman	Royal Victoria Hospital	
	David Hill	Lawson Health Research Institute	Skyscan
	Andrew Karaplis	Lady Davis Institute/Jewish General Hospital	
	Frank Beier	University of Western Ontario	
Development of bone and cartilage: the role of the nuclear steroid orphan estrogen related receptor	Jane Aubin	University of Toronto	Allergan
	Frank Beier	University of Western Ontario	
	Suzanne Bernier	University of Western Ontario	
	Michael Underhill	University of Western Ontario	
Metalloproteases and cartilage destruction in mouse models of arthritis	John Mort	Shriners Hospital for Children	
Recombinant peptides for the promotion and inhibition of mineral formation	Rama Khokha	University Health Network	
	Harvey Goldberg	University of Western Ontario	
	Graeme Hunter	University of Western Ontario	
	Marc Grynepas	Mount Sinai Hospital	
	Marc McKee	McGill University	
Jaro Sodek	University of Toronto		

THEME: CELLULAR AND MOLECULAR BIOLOGY OF JOINT TISSUES (CONTINUED)			
Leaders: Jeff Dixon, Janet Henderson			
Project Title	Investigators	Institutions	Corporate Partners
Role of osteopontin in inflammatory arthritis	Jaro Sodek Marc McKee Harvey Goldberg Graeme Hunter	University of Toronto McGill University University of Western Ontario University of Western Ontario	Immudiagnostic
Overexpression of the osteoclast-specific V-ATPase subunit, "α3", in RAW264.7 cells: A potential screen for antiresorptive agents to prevent bone loss in inflammatory arthritis	Morris Manolson Johan Heersche Jeff Dixon Stephen Sims	University of Toronto University of Toronto University of Western Ontario University of Western Ontario	
Role of matrix metalloproteinases and their inhibitors in joints	Muhammad Zafarullah	Centre hospitalier de l'Université de Montréal-Hôpital Notre-Dame	Wyeth Ayerst Canada
Osteoclastic resorption in inflammatory arthritis: regulation of osteoclasts and angiogenesis by the alpha-v beta-3 integrin blocker Vitaxin	Jeff Dixon Artur de Brum-Fernandes Hani El-Gabalawy Johan Heersche Stephen Sims	University of Western Ontario Université de Sherbrooke University of Manitoba University of Toronto University of Western Ontario	Medimmune
Searching for articular cartilage stem cells	John Matyas Jane Aubin	University of Calgary University of Toronto	
THEME: BIOENGINEERING FOR JOINT RECONSTRUCTION			
Leaders: Mike Buschmann, Nigel Shrive			
Project Title	Investigators	Institutions	Corporate Partners
Development of an in situ gelling polymer delivery vehicle for cell assisted repair of cartilage	Mike Buschmann Marc McKee Aboufazel Shirazi-Adl Mark Hurtig	École Polytechnique McGill University École Polytechnique University of Guelph	Biosyntech
Formation of tissue engineered implants for repair of osteochondral defects	Rita Kandel Marc Grynpas Bob Pilliar	Mount Sinai Hospital Mount Sinai Hospital University of Toronto	
Assessment of meniscus healing <i>in vivo</i>	Nigel Shrive David Hart Cy Frank Rita Kandel Bob Pilliar Marc Grynpas Mike Buschmann	University of Calgary University of Calgary University of Calgary Mount Sinai Hospital University of Toronto Mount Sinai Hospital École Polytechnique	Biosyntech
THEME: DIAGNOSTICS AND THERAPEUTICS			
Leaders: Hani El-Gabalawy, Sheila Lavery			
Project Title	Investigators	Institutions	Corporate Partners
Clinical surrogates for cartilage degradation in arthritis	Robin Poole Sheila Lavery Neil Hartman	Shriners Hospital for Children Université de Montréal The Ottawa Hospital	Amgen HDM Diagnostics Wyeth Ayerst
Validation of a rabbit model of osteoarthritis using non-invasive imaging techniques	David Holdsworth Alexandra Kirkley Stuart Foster Colin Webber Sheila Lavery	J. P. Robarts Research Institute University of Western Ontario Sunnybrook and Women's College Health Sciences Centre McMaster University Université de Montréal	Enhanced Vision Systems Corp.

THEME: DIAGNOSTICS AND THERAPEUTICS (CONTINUED)			
Leaders: Hani El-Gabalawy, Sheila Lavery			
Project Title	Investigators	Institutions	Corporate Partners
Development of an intra-articular delivery system	Helen Burt Tony Cruz	University of British Columbia Mount Sinai Hospital	Angiotech
Design and monitoring of low-wear bearings for total joint replacement	Tim Bryant Dennis Bobyn John Medley	Queen's University Montreal General Hospital University of Waterloo	
Computer-assisted joint replacement surgery	James Johnson Graham King David Chess	St. Joseph's Health Centre St. Joseph's Health Centre St. Joseph's Health Centre	
Development of an intra-operative measurement system for total knee arthroplasty	David Chess James Johnson Graham King	St. Joseph's Health Centre St. Joseph's Health Centre St. Joseph's Health Centre	
Establishment of a bank of synovial fluids and paired sera from arthritis patients for the evaluation of new methods facilitating the diagnosis and the monitoring of progression and therapy of arthritis	Yves St. Pierre Gilles Boire Artur de Brum-Fernandes Robin Poole Henri Ménard	Institut national de la recherche scientifique/ Institut Armand-Frappier Université de Sherbrooke Université de Sherbrooke Shriners Hospital for Children McGill University Health Centre	Biophage Pharma
THEME: METHODOLOGIES AND OUTCOMES			
Leaders: John Esdaile, Monique Gignac			
Project Title	Investigators	Institutions	Corporate Partners
Development of a cost saving and efficient clinical data management tool	Rolf Sebaldt	McMaster University	
Assessing the quality of care of rheumatoid arthritis at a population level	Diane Lacaille	Arthritis Research Centre of Canada	
Multilevel adaptive assessment of health related quality of life: integration of item response theory and preference-based measurement	Jacek Kopec	Arthritis Research Centre of Canada	
Characterizing the clinical, quality of life, and economic outcomes in juvenile idiopathic arthritis	Peter Malleson Ann Clarke Patricia Dobkin Ciaran Duffy	BC Children's Hospital Montreal General Hospital Montreal General Hospital Montreal Children's Hospital	
Arthritis disability and participation in employment: analysis	Monique Gignac Aslam Anis	University Health Network Providence Health Care	
The sensitivity to change and responsiveness of indirect utility measures and a disease-specific measure in patients with rheumatoid arthritis	Aslam Anis John Esdaile	Providence Health Care Arthritis Research Centre of Canada	
Cost-effectiveness of anakinara (a new interleukin 1 blocker) compared to standard therapy and infliximab plus methotrexate for the treatment of rheumatoid arthritis	Aslam Anis John Esdaile	Providence Health Care Arthritis Research Centre of Canada	
SPECIAL INITIATIVES			
Project Title	Investigators	Institutions	Corporate Partners
Course of osteoarthritis: a multidisciplinary programmatic proposal to measure the trajectory of osteoarthritis	Elizabeth Badley Gillian Hawker Michal Abrahamowicz Monique Gignac Paul Fortin John Esdaile	University Health Network Sunnybrook and Women's College Health Sciences Centre Montreal General Hospital University Health Network University Health Network Arthritis Research Centre of Canada	HDM Diagnostics Inc.



The Network in Action

Ian Rollo, Catherine Hofstetter and Lisa Lorenzetti

Ian Rollo

Ian Rollo has a PhD in Pharmacology and Therapeutics, and Medical Microbiology from the University of Manitoba, where he was a full professor. He emigrated from the U.K. in 1961 after graduating in Science from Aberdeen University in 1945. He began teaching in Winnipeg, in the faculties of Dentistry and Medicine, at the University of Manitoba, and acquired his doctorate. Since his retirement from the university in 1993, he has been involved in a number of volunteer activities.

Ian knows first hand about arthritis. He has had osteoarthritis for many years and had two total knee replacements. Ian was nominated as a member of CAN's Consumer Advisory Council by a colleague at Winnipeg's Rehabilitation Hospital. "I joined wholeheartedly because of my personal involvement and professional background."

Recognizing that arthritis is a large and increasing problem, Ian feels he has something to contribute both as a consumer and from his training and experience. As part of training for lay members of Council, he gave a 'mini' introduction to basic pharmacology (to be concluded at September's Annual Conference) on a conference call. After attending several 'theme' meetings and other CAN events, Ian finds CAN to be sensitive to consumers' opinions and welcoming of their participation. He looks forward to seeing the Council role evolve.



Catherine Hofstetter

Catherine Hofstetter is a Toronto native who has been running a family-owned business that installs commercial fencing, for 15 years. She was diagnosed with arthritis when she was only 36 years old.

According to Catherine, “It affected everything. I continued to work because I owned the company. I didn’t have to account for my productivity. It was a struggle for the first few years.”

Early this spring, Catherine was recruited to join CAN’s Consumer Advisory Council. She had previous experience as a volunteer with The Arthritis Society in a speaking and advocacy role.

Consumers now have a voice in the direction of the research. Catherine says, “It’s going in a very different direction than it might have gone without consumer involvement. We put a face on arthritis research. It keeps them aware of who it’s for. Arthritis is well-known but the impact is not well understood. It’s not just grandma having an aching knee. Lives of people are completely devastated by it, at the prime of life too.” Catherine knows the importance of having the consumer at the table when the research agenda is determined.

Lisa Lorenzetti

Lisa Lorenzetti travels the world. She has cruised the Amazon and back-packed in Central America. Diagnosed with severe osteoarthritis of her hip at 24, she lived in chronic pain and eventually walked with the aid of a cane, but did everything she could to keep well while she pursued her education and a career as a social worker. Lisa now works in community development for the City of Calgary and is completing her master’s degree in social work. In addition to her work, Lisa is a social activist in the areas of social justice, women’s issues, anti-poverty and anti-racism.

A year ago Lisa underwent surgery in Birmingham, England that changed her life. Surgeons re-surfaced her hip, capping the femoral head with metal instead of removing a significant amount of bone as is done in standard hip replacement surgery. Her partner and members of her family accompanied her for the surgery. Lisa says, “They suffered as much as I did.” Free of pain, she now does salsa dancing, goes roller blading, and takes long walks.

Lisa is involved in CAN’s Consumer Advisory Council to provide an informed consumer voice. She describes dealing with her arthritis as the biggest struggle of her life and feels there is some healing in speaking to those who are doing the research and being heard. For Lisa, consumer participation reflects the humanity of the issue. When consumers, researchers and physicians all sit around the same table, a synergy is created and issues are moved forward. The experience with CAN has been “eye opening for me,” says Lisa. “I’ve been able to contribute to the learning of others and gain a better understanding of what is happening to me.”

Today Lisa says, “I feel like I have been given permission to dream about my life again, a fascinating journey.”

Dr. Tassos Anastassiades

Dr. Tassos Anastassiades practices clinical rheumatology at Kingston General Hospital, in Kingston, Ontario. He sees first hand the pain, disability, and loss of quality of life that arthritis can cause. Dr. Anastassiades is also Professor of Medicine (Rheumatology) and of Biochemistry at Queen's University. His main area of research interest is in the repair of damaged cartilage and bone.

Attracted to research in arthritis because of his interest as a biochemist in connective tissue and by the quality of the people working in the field, he has been trying to find a way to repair damaged cartilage. Dr. Anastassiades worked with a series of glucosamine compounds since glucosamine forms part of complex sugar molecules, some of which are abundant in connective tissues, especially in cartilage. He was able to modify glucosamine into compounds that can stimulate cartilage cells to proliferate, which may help with cartilage repair. Glucosamine has been used as an over the counter product for reduction of the pain associated with arthritis.

Dr. Anastassiades chose CAN as a partner to help commercialize his discovery because of the expertise it offers. The Network helped obtain a patent and negotiate a licensing agreement with Farnam, a US company that distributes veterinary products, for use of the compound in animals to relieve the symptoms of osteoarthritis. Once this is launched, his future research will look at the application of the compound for people with arthritis.



Danika Batiste

Danika Batiste is a member of Canada's next generation of arthritis researchers. She is working towards a master's degree in Sports Medicine at the University of Western Ontario. Born in Sarnia, Danika obtained a B.Sc. in Human Kinetics at the University of Guelph. Following a year of research at the University of Guelph, on the relationship between force, stress and strain and bone architecture, she began her graduate studies.

The current gold standard for clinically evaluating osteoarthritis in people is arthroscopy, since the current imaging technologies do not have sufficient resolution to detect early cartilage lesions. Danika is a member of a team of researchers working on a CAN-funded project to validate and characterize a rabbit model of osteoarthritis. This will be done using advanced, non-invasive imaging techniques. In the future, these techniques will be applied *in vivo* so that it will be possible to monitor the effects of pharmaceutical and surgical therapies in animal models of osteoarthritis. Ultimately, these techniques could be available for use on people with osteoarthritis.

For Danika, the networking opportunities this project offers are "amazing." In addition to her supervisors, Drs. David Holdsworth and Alexandra Kirkley, she is in contact with leading researchers working in the field of osteoarthritis, such as Dr. Sheila Laverty at the University of Montreal, Dr. Stuart Foster at Sunnybrook and Women's College Health Sciences Centre, Dr. Colin Webber at McMaster University, and Dr. Robin Poole, at the Shriners Hospital for Children, who is examining the biochemical and metabolic aspects of the rabbit model at the same time the project team members are looking at the non-invasive imaging techniques. Through CAN she has also met researchers at the universities of Calgary and British Columbia. In her own words, "I have benefited enormously and I have only been in the program for one year."



Dr. Karl Rudolphi

Dr. Karl Rudolphi of Aventis Pharma Deutschland is collaborating with the Canadian Arthritis Network to help discover new therapies for osteoarthritis. Dr. Rudolphi was introduced to CAN by Dr. Robin Poole two years ago and Aventis is now the sponsor of a project in Canada to further the characterization of an osteoarthritis pre-clinical research model.

Having spent almost twenty five years in pharmaceutical research after obtaining a PhD in Physiology and Pharmacology at the University of Giessen in Germany, Dr. Rudolphi sees involvement with the Network as a faster and more efficient way to discover and develop new therapies. He also believes that collaboration with a scientific network like CAN is the way research will be done in the future because only a network can deal with the increasing complexity of medical science and produce results quickly.

The research model of osteoarthritis in rabbits will provide more information about the potential of new intra-articular therapies for arthritis. A veterinary surgeon, a basic scientist and a pathologist in CAN are collaborating on the project. Other CAN research projects that are looking at new diagnostic imaging methods could characterize this model further. This collaboration, which clearly demonstrates the essence of the Network, will shorten the time needed to bring new therapies to people with arthritis, alleviating their pain and reducing their disability.



Financial Summary

For the year ended March 31, 2002	2002	2001
REVENUES		
NCE grants	\$ 4,858,000	\$ 4,856,000
The Arthritis Society, restricted for training	325,050	194,000
Interest income	62,705	142,031
Other	20,000	1,140
Consulting	9,724	11,700
Conference fees and sponsorships	–	28,694
Services-in-kind	–	294,511
	\$ 5,275,479	\$ 5,528,076
MISSION FULFILLMENT EXPENSES		
Research grants	\$ 2,793,887	\$ 2,691,000
Core services	623,232	425,798
Research themes and committees	291,655	234,634
Training and scholarship grants	264,006	299,031
Public and corporate affairs	229,667	128,756
Business development	112,582	113,682
	\$ 4,315,029	\$ 3,892,901
GOVERNANCE AND ADMINISTRATION EXPENSES		
Administrative salaries	\$ 158,911	\$ 133,863
Management fee	131,537	66,950
Legal and audit	117,309	43,608
Consulting services	114,634	88,145
Travel and networking	80,523	77,011
Administrative expenses	52,167	85,866
Amortization	44,931	53,078
Committees and annual conference	27,553	110,649
	\$ 727,565	\$ 659,170
WRITEDOWN OF INVESTMENTS	\$ 193,388	\$ –
TOTAL EXPENSES FOR THE YEAR	\$ 5,235,982	\$ 4,552,071
EXCESS OF REVENUES OVER EXPENSES, END OF YEAR	\$ 39,497	\$ 976,005

Full audited financial statements are available on request

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