ARTHRITIS PROGRAM GETS MAJOR PRIVATE RESEARCH INVESTMENT

BUCHAN FAMILY’S LEAD GIFT BOOSTS CAMPAIGN MOMENTUM

With close to $21 million raised in just under a year, the Campaign to Cure Arthritis continues to make tremendous progress toward its $25 million goal. The Campaign received an inspiring boost with a $5 million lead gift from the Buchan Family Foundation to support the Arthritis Program at Toronto Western Hospital.

Inspired by the care Tina Buchan received at the Arthritis Centre, the Buchan Family chose to support the creation of state-of-the-art laboratory facilities to accommodate new scientists who will be recruited for ground-breaking research into the disease. In recognition of this gift, a new arthritis research laboratory will be named in the family’s honour. Featuring world-leading specialists and cutting-edge resources, the Buchan Family Arthritis Research Centre will be located in the brand new Krembil Discovery Tower at the Toronto Western Hospital site when it is completed in 2013. The new centre will be an innovation cluster exploring cures for arthritis.

“Our family is very excited about creating this new facility for arthritis research,” said Tina Buchan. “We want this research to have a global impact for people suffering from arthritis and ultimately lead to a cure.”

“We are tremendously grateful to Bob and Tina for making this transformational gift”, said Dr. Nizar Mahomed, UHN’s Arthritis Program Medical Director and Head of the Division of Orthopaedic Surgery. “The future discoveries made at the Buchan Family Arthritis Research Centre will benefit people suffering from arthritis globally.”

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Dr. Rajiv Gandhi knew he wanted to be an orthopaedic surgeon from the moment he began his medical training at McMaster University.

“I’m passionate about orthopaedics because I really like the patient population I work with,” says Dr. Gandhi. “Whether they are young athletes who have experienced injury, or elderly patients who need joint replacement to regain mobility, they’re all incredibly motivated to get better. The interventions we offer here are very effective, so it’s rewarding to play a role in improving a patient’s quality of life.”

His determination saw Dr. Gandhi become a leader within the Arthritis Program almost immediately.

Dr. Gandhi has now been on staff at Toronto Western for five years; taking on approximately 400 elective and 100 trauma surgeries annually. That is a lot of repaired joints and mended bones in just five years, and he has seen a significant shift in the patients he operates on in that time.

“We’re operating on younger and younger people. There’s clearly a transition in society where arthritis is affecting people at younger ages. It’s no longer unusual to have people in their 20s needing total joint replacements; which means we’re demanding more of the implants we’re putting into people. The technology simply wasn’t designed for this and the burden of revision surgery – replacing implants over time – is going to skyrocket.”

It is these demographic changes that drive Dr. Gandhi’s two primary research foci: developing the Arthritis Research Platform that includes a comprehensive osteoarthritis tissue biobank at Toronto Western – the first of its kind in the world – and using stem cells to potentially halt or reverse the course of arthritis. Both areas require donor investment to succeed.

“Data derived from the Biobank will assist with early diagnosis and ensure patients get on the right treatment path from the beginning. Analysing tissue samples from the Biobank will also help tell us if there is a connection with osteoarthritis, the most common form of arthritis, and other chronic diseases such as diabetes, obesity and high blood pressure. I believe there is, but the physiology of that relationship is still being studied.”

“THERE’S CLEARLY A TRANSITION IN OUR SOCIETY WHERE ARTHRITIS IS AFFECTING PEOPLE AT YOUNGER AGES.”

Currently, there is no cure for osteoarthritis and surgery is the best option for patients. As in many other areas of medicine, stem cells may hold the key to creating more effective treatments to control symptoms and repair joints. The Arthritis Program is collaborating with Scientists from the McEwen Centre for Regenerative Medicine who have successfully created human cartilage from stem cells with the goal of developing cell and tissue based transplantation therapies for the treatment of osteoarthritis.

“My research is focused on how we can use certain stem cells to modulate the inflammation of osteoarthritis, which will help to alleviate the pain experienced by sufferers. The next phase of research involves trials using large...
animal models to prove the efficacy of such treatments. Once we succeed, we will approach Health Canada to get approval to conduct clinical trials with patients. We’re on the right track towards a cure.”

Dr. Gandhi’s two areas of research complement one another and, within the next 10 years, offer the hope of truly personalized medicine for patients.

“As an example; a 50-year-old gentleman comes into our office with a painful arthritic knee. He would donate a blood sample, and from that sample we could run his genetic and protein profile to understand his genes and what proteins are expressed in his blood. From there we could characterize that patient to say ‘The chance of your disease progressing is this. This is the profile of your disease and the appropriate treatment is this.’ We could then offer a stem cell treatment that is tailored specifically to his disease that would stop and reverse the disease and hopefully avoid total joint replacement surgery.”

These major advances in treatment could address what Dr. Gandhi believes is the Arthritis Program’s greatest challenge: maintaining world-leading levels of care with ever-increasing patient volumes, combined with a shrinking pot of resources.

“We have the best surgeons and researchers working to solve this challenge right here at Toronto Western Hospital. This is a challenge that hospitals are facing around the world, and so our findings have the opportunity to improve care globally. That’s an exciting prospect.”
THE HAND PROGRAM

Giving Patients Back Their Independence

Specialized care is a provincial resource.

Having the use of our hands for even the simplest tasks like using a knife and fork or brushing our teeth is something many of us take for granted. However, for those who have experienced traumatic injury or the crippling effects of degenerative diseases like arthritis, these simple daily tasks can be challenging and bring on severe pain. The surgeons, clinicians and support team in UHN’s Hand Program, an integral component of the Arthritis Program, are helping to give people back the use of their hands, and as a result, their independence.

Based at Toronto Western Hospital, the Hand Program currently has four surgeons and a comprehensive team of physicians, physical therapists, occupational therapists, hand therapists, nurses, orthopaedic technicians and social workers to care for patients. The Hand Program provides care in four primary areas: traumatic hand injury; arthritis of the hand; rheumatoid arthritis and work-related injuries.

As the only such program in the city, and one of two such resources in Ontario, people come from all over the province to receive specialized care. The patients that rely on our team receive a range of treatments, from physiotherapy and therapeutics to finger and hand re-attachment in the event of severe trauma. These latter cases can be particularly challenging because of their time-sensitive nature.

The UHN Hand Program is so well-respected, it has even become the go-to resource for Toronto’s professional teams including the Maple Leafs and Raptors; providing care for those multi-million dollar hands.

As with other areas of medicine, future hand procedures will continue to be more minimally-invasive, or use therapeutics to avoid surgery all together, as in the case of rheumatism. These advances, many of which are being led here at UHN, are ensuring faster recovery times and better quality of life for patients. With the recent addition of Toronto Rehabilitation Institute to UHN, a greater focus on hand rehab will further assist patients in their recovery.

Dr. Herb von Schroeder is a Microvascular Hand Surgeon who also serves as the Medical Director of the Workplace Safety and Insurance Board (WSIB) Hand and Wrist Specialty Clinic at Altum Health. With Altum’s multidisciplinary team of specialists, exceptional care is provided to patients with hand and wrist injuries and conditions to ensure a successful and safe return to work. Over the years, WSIB workplace safety programs have had a significant impact on lessening on-the-job accidents.

The Hand Program is currently in the process of recruiting a new leader, who is expected to join the team in late-summer and set the course for the program in the years to come.
As a new addition to the Rheumatology Division, Dr. Jorge Sanchez-Guerrero is attracted to the “complexity” of rheumatology.

Bringing a wealth of expertise and experience from Mexico, Dr. Jorge Sanchez-Guerrero took on the position of Rheumatology Division Chief for both UHN and Mount Sinai Hospital in July, 2011.

Born and raised in Mexico, Dr. Sanchez-Guerrero received his medical degree from the University of Guadalajara, and trained in internal medicine and rheumatology at the Instituto Nacional de la Nutricion (National Institute of Medical Sciences and Nutrition). Moving to Boston, he completed a Master of Science Degree from Harvard Medical School, and finished post-doctoral training at the Brigham and Women’s Hospital, a teaching affiliate of Harvard.

As his training advanced, Dr. Sanchez-Guerrero was attracted to rheumatology due to the area’s breadth. “There needs to be a multi-systemic coverage of this specialty,” Dr. Sanchez-Guerrero explains. “Some very complex cases are often dealt with.”

Returning to Mexico as staff Internist and rheumatologist at the National Institute of Medical Sciences and Nutrition, Dr. Sanchez-Guerrero took over as head of the hospital’s Department of Immunology and Rheumatology between 2002 and 2011. “The hospital is one of the best in the country,” he elaborates, “and the rheumatology department the most renowned in Latin America.”

Dr. Sanchez-Guerrero is now thrilled to be working in Toronto, overseeing several clinics, top-tier specialists, and an in-patient unit caring for patients from across Ontario with complex rheumatic diseases. Recognizing the escalating need for effective treatments, he is focused on improving our understanding of rheumatic and related disorders.

“Systemic, autoimmune diseases are chronic and severe, and may involve almost any organ,” he elaborates. “Early diagnosis is very important in order to start treatment on time. Once this is achieved, the disease can be controlled.”

With his main area of research being connective tissue diseases, Dr. Sanchez-Guerrero is targeting lupus in particular; measuring its causes and breaking down how to best diagnose and treat the disease.

Dr. Sanchez-Guerrero’s many accolades include the Edmund L. Dubois Award for lupus research from the American College of Rheumatology in 2001. Over 100 of his articles have been published in peer-reviewed journals. His passion for medicine is also reflected at home — his wife is a renal pathologist at Toronto General Hospital, and his daughter is finishing medical school in Mexico City. Meanwhile, two teenage sons have quickly acclimatized to high school in Toronto.

Juggling a busy work schedule split between teaching, patient care, and a host of administrative tasks, Dr. Sanchez-Guerrero looks forward to driving rheumatology efforts forward at UHN. “This is one of the top hospitals in the world in rheumatology — both in terms of patient care and teaching,” he enthuses. “Everybody is very supportive and really wants to work together.”
The gradual decline of the functional parts of the human body beginning in the third decade is well documented. Healthy diet and exercise are key components that help slow down this process, however, a growing public health issue is the rise of patients living with osteoporosis – a bone disease that shows no symptoms and may be hidden until a minimal trauma accident occurs.

Osteoporosis causes bone deterioration that leads to loss of bone mass which in turn causes bones to fracture easily – hip and spine fractures are the most common. Osteoporotic bone fractures cause considerable pain, loss of functionality and disability. This leads to a poor quality of life that can eventually spiral into isolation, depression and presents a high risk of death. An estimated two million Canadians suffer with this condition, a number likely to rise to 6.9 million by 2016.

**Focus on prevention**

The good news is that osteoporosis can be prevented and treated with adequate calcium and vitamin D, exercise and medication. However, not all Canadians suffering from osteoporosis are getting the care that they need. Despite the fact that more than 80% of fractures in older adults are caused by osteoporosis, many of these patients are not assessed for the disease and are not accurately diagnosed.

“In order to fight osteoporosis, we need to take a comprehensive approach and develop effective and sustainable programs for patient education, professional development, community outreach, and research,” says Dr. Angela Cheung, Lillian Love Chair in Women’s Health and Director of the Osteoporosis Program and the Centre of Excellence in Skeletal Health Assessment at UHN and Mount Sinai Hospital.

**North american leader**

The Osteoporosis Program is part of UHN’s renowned Arthritis Program. They have developed guidelines and policies for osteoporosis care across Canada and North America and – as one of the most productive osteoporosis programs in the country – the program offers diagnostic and clinical services to osteoporosis patients with the optimal management of their disease. The focus of care is on reducing fracture risk and improving quality of life.
Serving over 3000 patients annually, the program is part of the Centre of Excellence in Skeletal Health Assessment — a group of bone diagnostic centers in partnership with the Department of Medical Imaging centres at UHN and Mount Sinai Hospital. The lab is equipped with state-of-the-art diagnostic instruments, including a DXA (Dual-energy X-ray Absorptiometry) machine, currently considered to be the gold standard device for diagnosing osteoporosis.

“OUR MAIN GOAL IS TO BRIDGE THE CARE GAP BETWEEN OSTEOPOROSIS AND FRACTURES.”

One of the newest high-tech additions to the Centre of Excellence in Skeletal Health Assessment is the new densitometer or Bone Mineral Density (BMD) machine at Toronto Western Hospital. It can analyze and assess bone density at routine sites such as the hip, spine, and wrist; perform total body composition assessment which provides images of the distribution of fat, lean tissue and bone; perform a vertebral fracture assessment to detect vertebral fractures; perform hip structural analysis; and can assess for asymptomatic atypical femur fractures. The machine also comes with software for other research scans such as analyzing prosthetic hips.

Promoting bone health
Furthermore, Dr. Cheung has also developed an Osteoporosis Exercise Guide for patients available at Toronto General, Toronto Western and Princess Margaret pharmacies, as well as, the Osteoporosis Clinics. The book, based on over 15 years of clinical experience, provides effective exercise guidelines to maintain good bone health.

“Our main goal is to bridge the care gap between osteoporosis and fractures.” elaborates Dr. Cheung. In a New England Journal of Medicine letter to the editor, she stated: “there has been a disconnect between osteoporosis and its consequence – the increased risk of fractures. We need to revisit the diagnostic testing methods and testing intervals to determine the optimal regimen for a complete fracture risk assessment.”

Putting new guidelines into place will translate into improved patient care and consequently the reduction of future fractures.
The Arthritis Program is the premier and largest multidisciplinary arthritis program in Canada. It has the largest division of arthritis clinical researchers in North America. Its Rheumatology division is ranked #1 in North America. Each year, more than 80,000 patients receive innovative and compassionate care from the program’s leading multidisciplinary arthritis team. The Arthritis Program is based at Toronto Western Hospital which along with Toronto General, Princess Margaret and Toronto Rehabilitation Institute, are part of University Health Network. All four are research hospitals affiliated with the University of Toronto.

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To Cure Arthritis!
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