

CV network

THE OFFICIAL BULLETIN OF THE INTERNATIONAL ACADEMY OF CARDIOVASCULAR SCIENCES VOL 12 NO 3 SUMMER 2013

**PUBLISHED WITH THE ASSISTANCE OF THE MYLES ROBINSON MEMORIAL HEART TRUST
and ST. BONIFACE HOSPITAL FOUNDATION**

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2013 Medal Of Merit Award - Dr. Roberto Bolli M.D.



The Medal of Merit was presented in Louisville on August 17, 2013. Shown above (L to R))
Bohuslav Ostadal, IACS President-Elect; Roberto Bolli and Naranjan S. Dhalla, IACS Executive Director

Dr. James Willerson, President of the International Academy of Cardiovascular Sciences, is pleased to announce the election of an extraordinary individual for the award of Medal of Merit for 2013. This highest honour of the Academy is being bestowed upon Dr. Roberto Bolli for his outstanding achievements in cardiovascular education and research. Previous winners of this prestigious medal were Drs. Michael DeBakey, Richard Bing, Robert Furchgott, Edwin Krebs, Eugene Braunwald, Robert Lefkowitz, Sir John Vane, James Willerson, Sir John Radda, Victor Dzau, Robert Jennings, Sir Magdi Yacoub, Louis Ignarro, Jutta Schaper, Wilbert Keon, Wolfgang Schaper, Nirmal Ganguly, Salvador Moncada, Howard Morgan, Ernesto Carafoli, Eric Olson, Laszlo Szekeres, Arnold Katz, Jay Cohn, SalimYusuf, Piero Anversa, Laurentiu Popescu and Makoto Nagano.

Roberto Bolli, M.D. is Director of the Division of Cardiovascular Medicine and University of Louisville's (U of L) Institute for Molecular Cardiology and a

member of the Cardiovascular Innovation Institute. He is also Department Executive Vice Chairman and Vice Chair for Research in the Department of Medicine.

His research focuses on preventing the damage caused during heart attacks by studying ischemic preconditioning, the phenomenon in which heart muscle exposed to brief periods of stress becomes resistant to the tissue death that might be caused by a heart attack. He is investigating the use of adult cardiac stem cells to repair dead heart tissue, pioneering the use of stem cells taken from the patient for potential heart repair applications. In 1998 Bolli led a U of L team that identified an intracellular molecule that could protect the heart from this kind of damage. This group presented its findings to 40,000 cardiologists at the 1998 American Heart Association conference.

In 2005, Bolli led a U of L team that was awarded an \$11.7 million grant from the National Heart, Lung, and Blood Institute – part of the National Institutes of Health – to continue to build on this research. To date, this is the largest nationally-competitive NIH grant awarded to the university. NIH reviewers rated the proposed research program as exceedingly innovative and potentially high-impact, noting that it addresses an extremely important clinical problem in a way that will move treatments from the laboratory to the patient as quickly as possible. Using highly unusual language, the reviewers called the proposal “a paradigm of what a program project grant should be.”

Since his arrival to U of L in 1994, Bolli and his team have brought over 50 million dollars in NIH grants to the university. Bolli presents regularly at national meetings and has published extensively in *Circulation Research*, the *Journal of Clinical Investigation*, *PNAS* and other prestigious journals.

He is currently chairman of the AHA's Distinguished Scientist Selection Committee, of the AHA's Council on Basic Cardiovascular Sciences and of the AHA's Council Operations Committee. He is a member of the advisory council of the National Heart, Lung, and Blood Institute. He was past-president of the International Society for Heart Research.

Bolli is the recipient of numerous awards and honors, including the Basic Research Prize of the American Heart Association (2001), the MERIT Award from the NIH (2001), the Research Achievement Award from the International Society for Heart Research (2004), the Lucian Award from McGill University (2004), the Ken Bowman Award from the Institute of Cardiovascular Sciences, University of Manitoba (2004), and the Howard Morgan Award for Distinguished Achievements in Cardiovascular Research from the International Academy of Cardiovascular Sciences (2005). He has published more than 270 peer-reviewed articles.

Bolli earned his medical degree at the University of Perugia in Italy and was a cardiology research fellow at the NIH.

Prior to joining U of L, he was a professor of cardiology at the Baylor College of Medicine in Houston

PEOPLE AND PLACES

Unique Conference Created A Great Atmosphere for Education and Networking



In Louisville KY on August 15-17, 2013, the International Academy of Cardiovascular Sciences – North-American Section organized the first Cardiovascular Forum for Promoting Centers of Excellence and Young Investigators. More than 50 Centers were represented and provided a most stimulating atmosphere for about 100 emerging professionals. The two-day symposium included the following topics: Autophagy and Cardiac Cell Death; MicroRNA and Cardiac Remodeling; Stem Cells and Cardiac Regeneration; and Diabetes and Metabolic Syndrome.

The Host Committee provided superb organization and outstanding hospitality led by Committee Chair Irving G. Joshua, Ph.D. and Suresh C. Tyagi, Ph.D. from the Biophysics Department of Physiology and Biophysics, University of Louisville.

The IACS is deeply indebted to Mitsubishi Rayon Cleansui Co. Ltd. for support of the Awards Program of this Forum. It was a great honor that Katsuhiko Shimada, President and Hideo Kumamoto, Director CD Promotion Office flew from their

headquarters in Tokyo to Louisville for the Forum.

IACS Awards were presented to Drs. Roberto Bolli, Sumeet Chugh, David J. Lefer, Davinder Jassal, Irving Joshua, Suresh Tyagai, Michael Czubyrt, Christopher White and Tareq Al-Maqtari – details are provided on Page 1 and following this article.



From the Conference Organizing Committee included (L-R) Suresh Tyagi, Louisville, KY; Stephen Schaffer, Mobile, AL; Dennis McNamara, New Orleans, LA; Irving Joshua, Louisville (Committee Chair); Roberto Bolli, Louisville, KY; Katsuhiko Shimada, (President, Mitsubishi Rayon Cleansui Co. Ltd., Tokyo, Japan); Bohuslav Ostadal, Prague, Czech Republic; and Grant Pierce, Winnipeg, Canada.



A highlight was the attendance of Dr. James Willerson, I A C S President, welcomed by Drs. Ostadal, Bolli and Dhalla. Dr. Willerson gave an update on the Use of Stem Cells to Treat Cardiovascular Disease in Humans”.

The concept for the meeting and dynamic leadership was provided by Dr. Naranjan S. Dhalla (shown with some of his fans who insisted that that Ivan Berkowitz take this picture as he did of all the groups at the Conference shown in this issue of CV Network).

IACS Honoured Outstanding Scientists at Forum in Louisville

Dr. Sumeet Chugh was honoured by the IACS with the Howard Morgan Award for Distinguished Achievements in Cardiovascular Research

Sumeet S. Chugh MD, FACC, FHRS, FAHA, FIACS



Dr. Sumeet Chugh (R) was presented with the Howard Morgan Award by Drs. Ostadal (L) and McNamara (C)

Dr Sumeet S. Chugh is the Pauline and Harold Price Endowed Professor of Cardiac Electrophysiology, Section Chief of Clinical Electrophysiology and Associate Director of the Heart Institute at Cedars-Sinai Medical Center, Los Angeles, CA, USA. He directs the Heart Rhythm Center at the Cedars-Sinai Heart Institute with a staff of over 70 physicians, researchers, trainees and allied health personnel. He is the Principal Investigator of the Oregon Sudden Unexpected Death Study, a population-based effort that is focused on identifying novel ways of predicting and preventing sudden cardiac arrest; and is supported by the National Institutes of Health as well as the American Heart Association. Dr Chugh has held leadership positions in the Heart Rhythm Society and American Heart Association, and also chairs the World Health Organization's Arrhythmia Expert Panel on the Global Burden of Disease Project. He has published over 250 papers and abstracts in scientific journals. He is on the editorial boards of several journals, including *Circulation*, the *Journal of the American College of Cardiology* and *Heart Rhythm Journal*.

The Makoto Nagano Award for Distinguished Achievements in Cardiovascular Education presented to Dr. David Lefer



Dr. Naranjan Dhalla presented the Makoto Nagano Award to Dr. David Lefer

David J. Lefer, Ph.D. is Professor of Surgery at Emory University School of Medicine in Atlanta, GA. His background is in the areas of cardiovascular physiology/pharmacology and cardiology research. He completed my Ph.D. training in both physiology and pharmacology at Wake Forest University. He then completed post-doctoral training in the Division of Cardiology at Johns Hopkins University. His major research focus is on the translation of novel therapies for the treatment of acute myocardial infarction and heart failure and my research expertise is in small and large animal models of cardiovascular diseases.

His career has included appointments in both basic science and clinical departments affording me valuable insight into cardiovascular research. Throughout my career I have learned the value of true basic science as well as the translation of basic science to the clinic. His most significant career accomplishments are in the fields of myocardial ischemia/reperfusion injury pathology and cardioprotection. His laboratory was among the very first to demonstrate that coronary nitric oxide (NO) production and bioavailability was significantly

attenuated within the first few minutes of reperfusion following myocardial ischemia. This work was published in *Circulation* in 1991 and provided a foundation for over 20 years of work investigating the cardioprotective actions of various agents that augment nitric oxide during acute myocardial infarction and heart failure. His laboratory was the first to report on the cardioprotective actions of novel nitric oxide donors in large animal models of myocardial ischemia/reperfusion and these results were also published in *Circulation* in 1993. They next demonstrated that statins (i.e., simvastatin and rosuvastatin) acutely activated eNOS, increased NO bioavailability, and significantly decreased myocardial infarct size following ischemia independently of their cholesterol lowering

actions. In 2005, his laboratory was among the first to demonstrate the potent cardioprotective actions of the NO metabolite, nitrite, in in vivo models of myocardial ischemia/reperfusion injury and these data were published in the Journal of Clinical Investigation and is among the most highly cited publications in the nitric oxide field. At present, nitrite therapy is currently being intensively investigated in clinical trials of acute myocardial infarction as well as in pulmonary hypertension, peripheral artery disease, and hypertension.

His laboratory has also performed pioneering research in the area of hydrogen sulfide biology, physiology and pharmacology. In 2007 my laboratory was among the first to demonstrate the potent cardioprotective actions of hydrogen sulfide in acute myocardial infarction and these results were published in the Proceedings of the National Academy of Sciences, USA. His laboratory has continued to work in the hydrogen sulfide field and were the first to demonstrate the robust cytoprotective actions of hydrogen sulfide in various preclinical models of heart failure with papers published in Circulation and Circulation Research demonstrating efficacy of hydrogen sulfide donors in severe heart failure. Throughout his career, his laboratory has been able to identify novel therapeutic targets and therapeutic agents to ameliorate myocardial cell injury and death in the setting of myocardial infarction and heart failure. He remains hopeful that these studies will ultimately translate into new therapies to treat cardiovascular diseases in the clinic.

Dr. Michael Czubryt was selected for Eric Olson Biomedical Investigation Award in Cardiovascular Sciences



Dr. Czubryt was presented with Eric Olson Biomedical Investigation Award in Cardiovascular Sciences by Katsuhiko Shimada (President, Mitsubishi Rayon Cleansui, Tokyo, Japan and Drs. Ostadal and Joshua

Dr. Michael Czubryt is Associate Professor of Physiology in the Faculty of Medicine at the University of Manitoba. He directs the Molecular Pathophysiology Laboratory in the Institute of Cardiovascular Sciences, a large group of basic and clinical researchers in cardiovascular medicine at the St. Boniface Hospital Research Centre in Winnipeg. Prior to establishing his laboratory, Dr. Czubryt undertook his graduate training in Winnipeg under Dr. Grant Pierce, followed by a postdoctoral fellowship under Dr. Eric Olson, one of the world's most pre-eminent scholars of cardiovascular medicine. Dr. Czubryt's research focuses on how transcriptional regulators of gene expression contribute to cardiovascular diseases, particularly heart failure, cardiac hypertrophy and fibrosis. His most recent studies on the transcription factor scleraxis have revealed its potent role in driving collagen gene expression in the heart, and points the way towards the development of novel antifibrotics. Dr. Czubryt's work has been funded by competitive, national grant funding since he began his independent scientific career. He was awarded a New Investigator Award from the Heart & Stroke Foundation of Canada, and was named the McDonald Scholar in 2004 for being the highest

ranked New Investigator in national competition that year. He has received a number of other awards including the Young Investigator Award from the Canadian Cardiovascular Society (2006), and most recently was appointed a Fellow of the American Physiological Society. Dr. Czubryt holds seven provisional patents, has published 40 peer-reviewed manuscripts and book chapters, and has been invited to give over 50 presentations at universities, national and international meetings and symposia. He balances his research with numerous teaching, mentorship and service roles, including chairing the MSc and PhD Fellowship Committees of the Manitoba Health Research Council, serving on the editorial boards of three scientific journals, and working on a large number of national and international peer review committees as reviewer, Scientific Officer or Chair. He lives in Winnipeg with his wife, Irene, and son, Thomas.

Dr. Czubryt was selected by the IACS Committee (Chair Dennis McNamara, Grant Pierce, Suresh Tyagi, Stephen Schaffer and Naranjan S. Dhalla) who invited the following to attend and deliver the Eric Olson Oration in Cardiovascular Sciences at the Forum:

"Granzyme B in Vascular Injury, Inflammation and Repair" - David Granville, Ph.D., UBC James Hogg Research Centre, St. Paul's Hospital, Vancouver, Canada

"Hydrogen Sulfide/MicroRNA-21 Partnership for Cardioprotection" - Fadi N. Salloum, Ph.D., Virginia Commonwealth University, Richmond, VA

"MLIP, A Novel Modulator of Heart Growth" - Dr. Patrick Burgon, University of Ottawa Heart Institute, Ottawa, Canada

"Scleraxis: A New Therapeutic Target in Cardiac Fibrosis" - Michael Czubryt, Ph.D., St. Boniface Hospital Research, Winnipeg, Canada

"miR-133 in the Diabetic Heart" - Paras Mishra, Ph.D., University of Louisville, Louisville, KY

Dr. Davinder Jassal was honored with Kern Wildenthal Clinical Investigation Award in Cardiovascular Sciences

Dr. Davinder S. Jassal is Associate Professor of Internal Medicine; and Principal Investigator, Cardiovascular Imaging at the Institute of Cardiovascular Sciences at the St. Boniface Hospital Research Centre in Winnipeg. Dr. Jassal's research focuses on the complementary use of multimodality cardiovascular imaging in the noninvasive assessment of heart failure syndromes. Using a combination of echocardiography (ultrasound of the heart), cardiac CT (computed tomography) and CMR (cardiac MRI), the Cardiovascular Imaging Laboratory at St. Boniface Hospital Research is dedicated to translational research focusing on four heart failure models:



Dr. Jassal (C) was presented with Kern Wildenthal Clinical Investigation Award in Cardiovascular Sciences by Katsushiko Shimada (President, Mitsubishi Rayon Cleansui, Tokyo, Japan) and Dr. Ostadal

1. Breast Cancer and Heart failure: A Tale of Two Cities

Breast cancer and cardiovascular disease are major public health concerns in Canada. The two diseases are intricately involved as treatment of one disease may lead to detrimental effects in the other. Although the current combination of surgical resection, radiotherapy, and chemotherapy may lead to remission in breast cancer patients, the administration of chemotherapeutic based agents, in particular Doxorubicin, are associated with an increased risk of cardiotoxicity.

2. ASICS (Avastin and Sutent induced cardiotoxicity study)

Colorectal and kidney cancer are major public health concerns in North America, affecting both men and women equally. Although the current combination of surgery, radiation, and chemotherapy may lead to remission in this cancer population, the administration of chemotherapeutic drugs is associated with an increased risk of developing heart failure.

3. Marathon Running and Heart Failure

Can too much exercise be detrimental to your health? Physical fitness has been shown to be an independent, long-term predictor of reduced morbidity and mortality from cardiovascular causes. Although the cardiovascular benefits of moderate exercise are well established, the cardiovascular effects of prolonged exertion, including marathon running, are less clear. Even though the risk of sudden death associated with participation in marathons is small, participation in such events is consistently associated with biochemical evidence of heart damage and dysfunction.

4. CHIRP (Cardiac hemodynamic imaging and remodeling in pregnancy)

The progression of pregnancy causes multiple physiologic changes in the female cardiovascular system. Such changes include enlargement of all four cardiac chambers, increased left ventricular wall thickness, mild valvular regurgitation, and an increase in both plasma volume and cardiac output by 40%. Structural and functional changes that develop during pregnancy have previously been investigated by numerous methods, and echocardiography is currently the standard modality. Due to the inherent limitations of echocardiography, we are investigating the use of cardiac MRI to study the changes in cardiac physiology during pregnancy. The objective of the CHIRP Study is to determine the range of normal structural and functional changes of the heart during a healthy pregnancy by employing both cardiac echocardiography and MRI.

Why is this work important? Diagnostic medical imaging has undergone a dramatic evolution over the past decade, owing to rapid technological advancement and innovative clinical applications. Today's diagnostic imaging technologies, in particular echocardiography and cardiac MRI, are rapidly being adopted in Canada as new tools for understanding mechanisms of disease including Herceptin induced cardiomyopathy, obstructive sleep apnea and the metabolic syndrome.

Dr. Jassal was born in Thompson, Manitoba, obtained an International Baccalaureate Degree at Sisler High School in Winnipeg, and graduated from the University of Manitoba with an MD in 1998. He completed a residency in Internal Medicine at the University of Manitoba from 1998-2001 and a residency in Cardiology at Dalhousie University in Halifax, Nova Scotia, Canada. Subsequently, he completed a clinical and research fellowship in Cardiac Imaging specializing in echocardiography, computed tomography, and MRI at Massachusetts General Hospital, Harvard Medical School, Boston, MA.

Dr. Jassal rejoined the Section of Cardiology, Department of Internal Medicine, Faculty of Medicine at the University of Manitoba in 2006 as an Academic Clinician Scientist, where half of his time is devoted to patient care in CCU and cardiac imaging and the other half devoted to translational research. He is currently Associate Professor of Cardiology, Oncology, Radiology and Physiology, Principal Investigator of the Cardiovascular Imaging Laboratory as a member of the Institute of Cardiovascular Sciences, and holds a Heart and Stroke Foundation New Investigator.

The following young faculty members were invited to deliver the following Kern Wildenthal Orations in Cardiovascular Medicine

"Proteotoxicity in Viral Cardiomyopathy" - Honglin Luo, M.D., UBC James Hogg Research Centre, St. Paul's Hospital, Vancouver, BC, Canada

"Human Recombinant ACE2 as Therapy for Cardiovascular Diseases: From Bench to Bedside" -Gavin Oudit, M.D., Ph.D., University of Alberta, Edmonton, AB, Canada

"The Art of Preventing Broken Hearts in Breast Cancer " - Davinder Jassal, M.D., St. Boniface Hospital Research, Winnipeg, MB, Canada

"Epigenetics and renovascular remodeling in hyperhomocysteinemia" – Sathmur Pushpakumar, M.D., Ph.D., University of Louisville, Louisville, KY

"Role of Micro RNA 499 During Myocardial Infarction" - Srikanth Givvimani, M.D., Ph.D., University of Louisville, Louisville, KY.



Dr. Irving Joshua presented with I A C S Lifetime Achievement Award

Irving Joshua is a Professor and the current Chairman of the Department of Physiology and Biophysics, School of Medicine at the University of Louisville, Louisville, Kentucky. He is a native of St. Michaels, Maryland and received his Bachelors of Science degree from the University of Maryland in 1970. His M.S. degree in Poultry Science (1972) and his Ph.D. degree in Physiology (1976) were awarded from the Pennsylvania State University. His first appointment was in the Department of Animal Sciences in 1978 and in 1981 he joined the University of Louisville, as an Assistant Professor in the Department of Physiology and Biophysics. He was appointed Department Chairman in 1995. In addition to his administrative duties he has been involved in scientific research and teaching of professional and graduate students for over 35 years. In general, Dr. Joshua's research has dealt with investigating vascular and microvascular control mechanisms

during normal and disease states. Recent research has been related to alterations in vascular control mechanisms with the development of both hypertension and diabetes mellitus and the role of endothelial mediated vasoactive substances.

Dr. Joshua has received many awards and recognitions for his scholarly achievements. He is American Heart Association Established Investigator (1985 – 1990) and is Fellow in the Cardiovascular Section of the American Physiological Society and a Fellow of the High Blood Pressure Council of the American Heart Association. Dr. Joshua is the past president of the Association of Chairs of Departments of Physiology and has served on the governing Council of the American Physiological Society. He has also served on research study sections of the NIH, NSF and the AHA. He is the current president of the Kentucky Chapter of the American Physiological Society. Dr. Joshua has published over 85 peer reviewed manuscripts and has made over 150 presentations and national and international meetings in the area of cardiovascular disease. His research has been funded by the National Institutes of Health, the American Heart Association and the national Science Foundation.

Dr. Suresh Tyagi was recipient of I A C S Distinguished Service Award



Suresh C. Tyagi, Ph.D., holds the Stodghill Endowed Professorship in Biomedical Research. He studies the genetic, molecular and cellular mechanisms that contribute to hypertension diabetes and heart failure. In particular, he studies homocysteine, and amino acid by-product that plays a critical role in artery damage and may be responsible for many heart attacks in individuals who do not display traditional cardiac risk factors. His work may lead to new treatments for these conditions, which afflict millions.

Dr. Tyagi is a professor in the Department of Physiology and Biophysics in the School of Medicine. His research is supported by the National Institutes of Health. He is the recipient of numerous awards and honors including a medal of merit from the International Society for Heart Research. He has published more than 156 peer-reviewed articles, invited papers, and reviews. He is currently principal investigator on four NIH grants totaling \$6.2 million.

He has served on editorial boards and committees for the Ameri-

can Journal of Physiology, Clinical & Experimental Hypertension, Molecular Cellular Biochemistry and the Journal of Molecular and Cellular Physiology. He has also been a member of multiple study sections with the American Heart Association and the National Institutes of Health.

Dr. Tyagi was an Associate Professor at the University of Mississippi Medical Center before joining the University of Louisville in 2003. He earned his Ph.D. in biophysics at the University of Aligarh, India. He completed postgraduate work in bioinorganic chemistry at University College, Cork, Ireland and the State University of New York at Stony Brook, in Pharmacology and Pathology.

From over 80 Poster submissions, a committee chaired by Roberto Bolli selected 5 Young Investigators to make presentations in Louisville for the James Willerson Clinical Award



Competition for Residents and Fellows. Included were Christopher Adams from Marshall University, Huntington WV; Seema Bhargava, Sir Ganga Ram Hospital, New Delhi, India; Sparkle Williams, Tennessee State University, Nashville TN; Vishalakshi Chavali, University of Nebraska, Omaha, NB; and Christopher White, St. Boniface Hospital Research Centre, Winnipeg, MB (shown with Drs. Tyagi and Joshua)

The winner of the James Willerson Clinical Award was Christopher White, St. Boniface Hospital Research, Winnipeg, MB who reported on his research on "A Donor Whole Blood-Based Perfusate Provides Superior Preservation of Myocardial Function during Ex Vivo Heart Perfusion"



(L-R Drs. McNamara, White, Schaffer, Joshua)

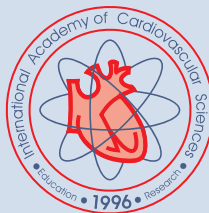


(Dr. McNamara, Tareq Al-Maqtari and Dr. Schaffer)

The 5 Young Investigators chosen to present for the Grant Pierce Biomedical Award Competition for Graduate Students and Postdoctoral Fellows were: Tareq Al-Maqtari, University of Louisville; Rinparna Ganguly, Northeast Ohio Medical University, Rootstown, OH; LeenaLitha Panneerseeelam, University of Utah, Salt Lake City, UT; Candice Thomas, Texas A&M Health Center, Temple, TX; and Qiam Chen Yong, Texas A&M Health Center, Temple, TX

The winner of the Grant Pierce Award was Tareq Al-Maqtari, University of Louisville whose topic was "Directing Differentiation of Cardiac Stem Cells by Transcription Factors"

Tareq Al-maqtari is a pharmacist who got his bachelor degree in "Pharmacy" from Aleppo University in Syria in 2003. In 2010, He came to the USA as a "Fulbright Scholar" to pursue his masters in Pharmacology and Toxicology at Univeristy of Louisville. His research was focused on the use of stem cells in the treatment of Parkinson's disease. Subsequently, he was admitted to the PhD program at the same department and started his PhD research at the "Institute of Molecular Cardiology". His specific project deals with enhancing the therapeutic effects of using human c-kit+ cardiac stem cells to treat myocardial infarction by enhancing their differentiation into functional cardiac cell types.



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Cardiac Rehabilitation: The ‘Next Step’ to a Heart-Healthy Life



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It's been shown to lower death rates from heart disease and even from other causes after the onset of cardiovascular disease, and it helps patients achieve a better quality of life. In fact, cardiac rehabilitation is a key "next step" in the recovery process following a heart attack or procedures such as bypass surgery or angioplasty.

Indeed, with the benefits so attractive, you'd expect that patients would be lining up to take advantage of cardiac rehabilitation. But throughout North America, referral and participation rates are not optimal.

"Cardiac care is incomplete unless you've received the benefits of the secondary prevention programs delivered through cardiac rehabilitation," said Dr. Andrew Pipe, Chief of the Division of Prevention and Rehabilitation at the University of Ottawa Heart Institute. "When you leave a dentist's office, you have a card with your next appointment on it. We need to be doing the same."

In an effort to improve those referral and participation

rates—to make sure patients have that "next appointment"—Dr. Pipe's rehabilitation group has implemented new approaches that are showing success.

The first step was to streamline the referral process. In 2006, the Heart Institute made referrals automatic. All inpatients would be referred for cardiac rehabilitation; the rehabilitation team would then determine eligibility.

The move to automatic referrals was effective at boosting the proportion of patients referred for rehabilitation, but it didn't necessarily improve the proportion of patients actually enrolling in the program. So in 2008, the group made a second change by adding a new member to the cardiac rehabilitation team—a nurse, whose sole job would be to visit each patient at the Heart Institute and talk to him or her about rehabilitation.

Having this conversation is important, said acting Manager of Cardiac Rehabilitation Sueann Tiller. It helps patients understand the benefits of cardiac rehabilitation, and it aids them in overcoming barriers to participation.

It's particularly important to talk to patients early in the process, explained Pamela Reid, one of the cardiac rehabilitation bedside referral nurses. In her experience, patients commonly go through a "honeymoon" stage, when they're conscious that their lives were in danger and have been saved. At this point, they are committed to taking the steps necessary to improve their lives. Later on, she continued, after they've left the hospital, they get back into the pressures of their regular lives and the importance of rehab can fade.

It's important to meet with patients early, before they're back to their usual routines because there are very few people who don't benefit from cardiac rehabilitation. Some patients may be too frail or physically disabled, or they may have so many co-morbidities that participation is impractical. Often, however, it's the barriers patients erect themselves that make participation seem impossible.

Some patients, for instance, feel that what has happened to them is out of their control and there is nothing they can do to improve their situations. This absence of hope means that they don't see any point in rehabilitation.

Other patients don't see heart disease as the chronic condition that it is. They believe that their surgery or new stent has solved the problem and that there's nothing more that needs to be done. In their minds, they're cured.

Being able to talk directly with patients helps them overcome those barriers and find solutions that allow them to participate, Reid said. "When they're giving me their host of reasons not to go to rehab, I try to have more reasons why they should go. I don't think we've found a barrier yet that we haven't figured out how to overcome."

The effort to increase participation has paid off. According to an evaluation published this year in the *Journal of Cardiopulmonary Rehabilitation and Prevention*, having a bedside referral nurse more than doubled the proportion of eligible patients attending intake for the rehabilitation program, an increase from 15.5 per cent of patients in 2003 to 2004 to 32.6 per cent in 2008 to 2009.

"Cardiac care is incomplete unless you've received the benefits of the secondary prevention programs delivered through cardiac rehabilitation."

– Dr. Andrew Pipe, Chief, Division of Prevention and Rehabilitation, UOHI

With invention born of necessity, the Heart Institute has developed innovative ways to serve a younger and more geographically diverse population.

And when patients do participate, they quickly discover the benefits. The foundation of the program is a twice-weekly exercise class, led by physiotherapists who are all certified by the American College of Sports Medicine. Their work, though, is supplemented by a team of professionals, all with the same goal—to support patients in leading heart-healthy lives.

A dietitian offers nutrition workshops and one-on-one counselling to help patients eat healthily, including tips on grocery shopping, recipes and advice for eating out. A social worker or psychologist can help participants with the emotional and mental adjustments needed to live a full life while coping with a chronic disease. There's even a vocational counsellor, something unique within cardiac rehabilitation programs in Canada, to help patients with the process of returning to work. This aspect is becoming increasingly important as the Heart Institute sees more and more younger patients.

And because the Heart Institute serves a large geographical area, it has had to be innovative in how it offers rehabilitation programs, Tiller said. In addition to the eight- to 12-week programs offered on-site, the Heart Institute provides a 12-week case-managed home program, where patients receive a binder of information that they work through with weekly phone calls from a member of the cardiac rehabilitation team. That program is also available in French, to better serve francophone patients within the region. A Tele-Rehab program connects classes in other centres through a video link to a class in session at the Heart Institute. That program, currently available in Cornwall, is in the process of expanding to Barry's Bay.

A key focus of the on-site program is helping patients plan for the future. Staff work to link patients with Heart Wise Exercise programs located in municipal and private facilities in the community. These programs are offered by leaders who have been trained by the Heart Institute, ensuring a safe environment where patients can continue to get their heart-healthy physical activity.

"We're hearing from patients what the gaps in service are," said Tiller. "And we're developing programs to close them." This means there will be even fewer barriers to prevent patients from taking that important next step toward managing their own health.

Benefits of Cardiac Rehabilitation

Heart Health

- Cholesterol and blood pressure measures
- Ability to participate in exercise
- Likelihood of quitting smoking
- Heart function, for those with heart failure

- Progression of heart disease
- Hospital readmissions
- Emergency room visits
- Angina pain
- Need for cardiac medications
- Risk of further disability

Improves

Reduces

Improves

Cardiac rehabilitation reduces the risk of

all-cause mortality by **27%**

cardiac mortality by **31%**

General Health & Well-Being

- Quality of life
- Overall health
- Adoption of healthy behaviours
- Strength and vitality
- Ability to return to work and social activities
- Psychological well-being
- Ability to deal with stress, anxiety and depression

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ICCAd 2013

10th International Congress on Coronary Artery Disease

October 13-16, 2013
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WHAT IT'S ALL ABOUT

EDITOR'S NOTE: As we have worked for some time on this article, we were surprised to see The Globe and Mail Front Page Headline Story about how Michael Posner, who was a writer for The Globe and Mail, had ignored a mild heart attack and then required triple cardiac bypass surgery.

The article can be found at:

<http://www.theglobeandmail.com/life/health-and-fitness/health/how-michael-posner-suffered-heart-disease-and-escaped-with-his-life/article14174603/>

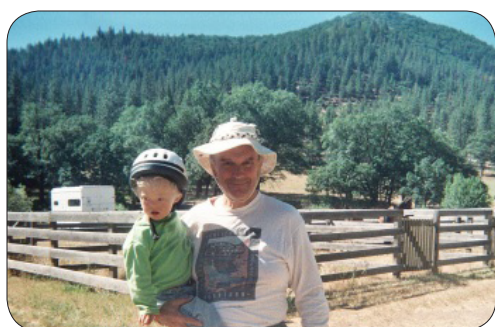
By Ivan Berkowitz, Winnipeg, Canada

In 1965, my family began to learn the hard way that heart diseases were BAD. We lost my uncle who had collapsed in his doctor's office. The next year my mother was immobilized in hospital; we were told "she looks like she is going to have a heart attack"; and she died that day. In a continuing series of tragedies, heart attacks took my father, another uncle, my mother's cousin with whom we were very close, two fathers-in-law, a tragic loss one morning of our friend who had been treated for breast cancer but was felled by a blocked artery and my special friend Myles Robinson in whose memory we created a fund which we built to \$500,000. We have been able to help I A C S, then on Dec. 20, 2012, we concluded an agreement to donate the funds to St. Boniface Hospital Research with the very specific condition that our Directors continue to administer the distribution of funds.

I have learned that CVD Research and translational training have made it possible now for people to survive even more dangerous conditions and carry on to healthy and fulfilling lives.

The most intimate for me was the experience of my grandson Christopher.

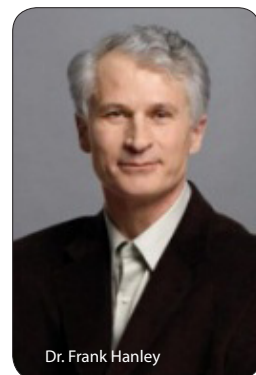
When he was born, he was rushed into intensive care where they discovered he has Down syndrome and, as is often the case, he had a hole in his heart. I was able to build possibly the best team in history to study the DVD of the echo of his heart and advise on his treatment including Drs. Lois DeBakey, Sir Magdi Yacoub, Allan Menkis, Jamil Tajik and Navin Nanda. At home, in California, Christopher was also blessed by the care a number of great people. Their assessments led to the conclusion that he required surgery to close the hole which was growing. Fortunately the California system made available one of the best pediatric cardiac surgeons in the world – Stanford's Dr. Frank Hanley. Through a 3 cm incision, he was able, as I am told,



to provide the only cardiac treatment which completely fixes a problem. Indeed Christopher is quite amazing as evidenced by his conducting an orchestra of their friends which he requested for his 6th birthday - you can enjoy it on my blog: <http://factsaccordingtoivan.blogspot.ca>

As I have accumulated information for this article, I am delighted that I was able to chat with one of Winnipeg's most precious assets, Kathleen Richardson who is a Canadian philanthropist and supporter of the arts. It is amazing that she sounds so vigorous and continues to be so full of optimistic enthusiasm. She told me that in 1980, she underwent successful surgery to replace a heart valve. Subsequently, several people asked why she hadn't gone to Minneapolis or Dallas where she would have had excellent surgeons and the best care. She always replied that there were surgeons here that were the equal or better than those anywhere.

Her surgeon at St. Boniface Hospital was Dr. Morley Cohen. He was born at Winnipeg on November 18th, 1923. Dr. Cohen received his undergraduate and medical school education at the University of Manitoba (1948). He then went to the University of Minnesota for post graduate surgical training, completing his residency and PhD in Surgery before returning to Winnipeg in 1955. He joined the Department of Surgery at the University of Manitoba where he performed Manitoba's first open-heart surgery in 1959. As the driving force behind the introduction of cardiac surgery to the Province of Manitoba, he served as head of the Division of Cardiothoracic Surgery from its inception in 1967 to 1984. He retired in 1987. In 2002, in recognition of his contributions to the province's medical community, he received the Queen Elizabeth II Golden Jubilee Medal. He died at Winnipeg on 18 August 2005.



Dr. Frank Hanley

Kathleen changed her post-op lifestyle, diet and engaged in caring for her own heart health. Obviously, her health 33 years later is proof of "WHAT IT'S ALL ABOUT" right here in Manitoba.

I recently read about Kristin Millar, who was just 18-years-old when she was diagnosed with heart disease, in a publication of the St. Boniface Hospital Foundation:

The person in the front of the canoe in this photo is Kristin Millar. The remarkable thing about this scene is that Kristin was attached to an LVAD (a Left Ventricular Assistive Device) – a pump that does the work the heart does for most of us, without our thinking about it much. [photo by Kathy Stinson] <http://www.cbc.ca/news/canada/manitoba/story/2013/01/23/mb-terry-macleod-bypass-surgery-manitoba.html>



“During a regular workout, I suddenly collapsed. This had never happened to me before. I immediately met with my doctor, and received news that would change my life forever,” says Kristin. Kristin was diagnosed with hypertrophic cardiomyopathy, a serious heart condition that can cause sudden death.

Despite her condition, she continued to live a healthy, active life until a few years later when she began to develop flu-like symptoms. ‘I began to feel nauseated, weak, and tired,’ says Kristin. ‘I couldn’t even climb the stairs to my apartment. I thought I was coming down with the flu. After six weeks of symptoms, I realized it was much more serious.’

During a routine visit to St. Boniface Hospital, Kristin went into cardiac shock. Her heart was functioning at less than six per cent; she had no measurable blood pressure; her organs were failing. St-Boniface Hospital’s incredible cardiac team saved her life by implanting a left ventricular assist device (LVAD) into her heart. For two years, the LVAD pumped blood throughout Kristin’s body, keeping her alive until she could receive a heart transplant. That day finally came in January 2012. ‘I finally got the phone call I had been waiting for,’ says Kristin. ‘I heard the words I had been hoping to hear for two years: Kristin, we have a heart for you.’ After successful heart transplant surgery in Ottawa, Kristin immediately returned to St. Boniface Hospital, where staff were there post-surgery to help her recover from the operation.

Three years after her life-saving surgery, Kristin is an accomplished public speaker, and recently received a B.A. in Sociology from the University of Winnipeg. She is currently enrolled in Red River College’s Creative Communications program and also works with Literacy Partners, a not-for-profit aimed at supporting learners and practitioners in their efforts to improve literacy and essential

skills in Manitoba.”

I also have a link to an interview with Kristin on our web site: <http://www.cbc.ca/news/canada/manitoba/story/2013/01/23/mb-terry-macleod-bypass-surgery-manitoba.html>



Gary Bachman



Peter Kaufmann

With over 35 years experience, Gary Bachman, a long time Winnipegger, is not just a real estate professional, he is a professional negotiator, an entrepreneur and a good listener. He has the unique ability to apply common sense solutions to business and real estate issues. Undoubtedly, the pressures of that career contributed to problems and Gary had open heart surgery. But it has not slowed him down. Indeed, his surgeon Alan Menkis chuckles that Gary is his first patient who was talking as soon as he awoke from the operation.

Local realtor Peter Kaufmann who earlier endured stressful careers as a grocer and municipal politician shared with me: “I had the heart attack in my friend’s cottage on McKenzie Portage on Lake of the Woods. I drove myself to the Kenora Hospital. And even though it was the May long week-end two years ago (the hospitals were busy) I was transported by air ambulance to Winnipeg. And got to the St. Boniface Hospital at 6:00 P.M. and the life-saving procedure was underway. When I woke up the nurse showed me the result of the stent that opened up one of my main arteries that had been completely blocked. Four ambulances in one day and a miraculous procedure later ... I am very grateful for the terrific service and care provided.”

Sheila Wolfe has always been slim, active and healthy BUT she developed blockages in her arteries and needed open-heart surgery. She said: “Just after my heart surgery I imagined that I would have to change my lifestyle. Before my cardiac event I was a very active senior. I was an active golfer and enjoyed many energetic activities with my four grandchildren. My husband and I also had a full social calendar. Six years have passed since my surgery and I can say that I am even more active and involved than I was before having my surgery. I have the deepest appreciation of my good health and I am indebted to the care and treatment that I received as a patient of the St. Boniface Cardiovascular Unit and for my physician, Dr. Wayne Poon.”

Sid Halpern spent too many years working in the clothing industry – long hours, high stress and no thought of healthy living. He has become my “Poster Boy” for secondary prevention (to avoid further heart problems). I asked Sid to share his epiphany:

“Sixteen years ago, at age 63, when I was diagnosed with quadruple artery blockages, (the main “widow’s artery” 95%) was the luckiest and happiest day of my life, in retrospect, that was my epiphany moment to wake up from the arrogance of invincibility, the false illusion of immortality and to start smelling the roses. That was the moment of introduction to the wonderful Health Care System in Manitoba: Dr Sheldon Permack – my family doctor who alerted me; Dr John Rabson – my cardiologist who diagnosed the illness and recommended; Dr Alexander Hamilton – the cardiac surgeon whose excellence discharged me from HSC in four days, and whose 1% mortality bested that of The Minneapolis Heart Centre’s 2.5%; the Step Down Nurses who “cared for me better than my mother would have”; the Reh- Fit Centre who educated me and motivated me to alter my life style and enjoy the best Golden Years of our lives; and Esther Halpern – MY gorgeous wife – emotionally, physically and strategically whose unconditional love, with my family, nursed and nurtured me back to excellent health.

I thank them each and every day.

February 16 1999, the day of my surgery, was the date my life changed and my lifestyle has become one of great pleasure and a goal of developing a quality as well as quantity to enjoy the third quartile from age 65 to 98 and then I will slow down a bit to enjoy the fourth quartile from 98 to 120. My current lifestyle of a balanced exercise regimen, balanced diet, good social interaction, and great family relationships and interactions has resulted in a lifestyle that I look forward to daily, rising at 6 AM with enthusiasm and energy and optimism.

My results to which I can attest include:

- A fitness level that enables the performance of my exercise routine with a minimum of exertion and effort – it’s actually so enjoyable and addictive that I now do it 5 days a week for 1 ½ hours each of those days.
- A productivity level that I know is at least 50% higher than when I worked full time, and is reflected in results in the

businesses I still attend to

- An energy level that enables– both intellectually and physically – to interact with my grandchildren and children – resulting in marvelous pleasurable experiences
- With the capacity in my energy I am able to spend many pleasurable hours in volunteering:
 - Mentoring young business people
 - Leading discussions with residents in The Simkin Centre Personal Care Home
 - Co- Chairing the fund raising for two organizations celebrating their 50th Anniversary
 - Assisting two young people in career counselling

And my most rewarding project:

- Being asked by my very good friend Ivan Berkowitz, the Heart Health Scholar of the International Academy of Cardiovascular Sciences, and Dr. Naranjan Dhalla to participate in a Think Tank to develop heart health prevention strategies and to co-chair



the annual Harold Buchwald Heart Health Luncheon to remember a very dear friend who counselled me through my surgery .I can honestly declare that I am in the happiest period of my life, enjoying life beyond my wildest dreams with my wife of 55 years. I wish the same for all my friends, whom I encourage and motivate to follow my lead. Not only did it result in Heart Health, but almost all arthritic, bursitis and sciatica pain has disappeared."

Let there be no question that Sid Halpern embodies "wellness" as defined by the WORLD HEALTH ORGANIZATION: "Wellness is an optimal state of health. It concerns a person's individual health physically, mentally, emotionally and spiritually and also their role in society and fulfilling expectations in their family, community, place of worship, workplace and environment".

I have been blessed by Sid's total commitment to honour our mutual friend Harold Buchwald at our annual Heart Health Luncheon . Sid is again the Co-

chair for our annual Luncheon sponsored by Manshield Construction on Oct.3 at the RBC Convention Centre Winnipeg highlighted by our 5th Lecture by Dr. Salim Yusuf who will address the subject on which he is probably the world's leading cardiologist:

"MOST PREMATURE HEART DISEASE IS PREVENTABLE"

Dr. Yusuf, a cardiologist who did his post-doc as a Rhodes Scholar at Oxford, is President-Elect of the World Heart Federation and Professor of Medicine and Executive Director of the Population Health Research Institute at McMaster University and Hamilton Health Sciences, where he has established an international program of research in CVD and prevention involving 85 countries.

He is participating the International Academy of Cardiovascular Science launch of a Manitoba Heart Health Think Tank for which the Luncheon will be the first initiative in a powerful collaboration with the St. Boniface Hospital Foundation, led by Chuck LaFlèche and the Myles Robinson Memorial Heart Trust. As well support is forthcoming from the Cardiac Sciences Program, Institute of Cardiovascular Sciences, Heart & Stroke Foundation of Manitoba, the Reh-Fit Centre and Mature Women's Centre at Victoria Hospital.

All funds raised will support the launch of this collaboration to encourage individuals to become engaged in protecting their own heart health. Learning from Dr. Yusuf is a good way to start!



An outstanding addition to the Luncheon program is our M C. CBC Manitoba's beloved morning man Terry MacLeod. Terry is recovering from a quintuple bypass at the St. Boniface Cardiac Sciences Program. As he told his co-host "I think of the day of his surgery as my new birthday!" The interview on CBC is available online at: <http://www.cbc.ca/news/canada/manitoba/story/2013/01/23/mb-terry-macleod-bypass-surgery-manitoba.html>. Terry MacLeod checked in during January with his morning show co-host Marcy Markusa, letting listeners know how his recovery from quintuple bypass surgery was going. (CBC) On Aug. 30, 2013, Terry was interviewed again by Marcy. He was delighted to report he feels better than ever! He is biking outside and rowing inside. On Aug. 31, he started a new assignment hosting CBC Winnipeg's Weekend Morning Show, Saturdays and Sundays from 6 – 9 AM.

Chuck LaFlèche encouraged me to read Jeffrey Simpson's "CHRONIC CONDITION – WHY CANADA'S HEALTH-CARE SYSTEM NEEDS TO BE DRAGGED INTO THE 21ST CENTURY". I decided it was appropriate to conclude this effort to encourage readers with the advice quoted from Emmett Hall, CC QC, author of the Royal Commission that gave rise to Canada's Medicare: "Individual responsibility was crucial in health care". Although the system he designed imposed no penalties on those who failed to shoulder such responsibility, he wrote: "Positive and enlightened attitudes towards their health and habits to promote it are part of individuals' responsibility which cannot be replaced by compulsion or by public health measures".

Helping Prevention ‘Live and Breathe’ in the Community

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In an ideal world, there would be no need for the University of Ottawa Heart Institute. In an ideal world, everybody would eat a healthy diet, be physically active, not smoke—and in living this healthy life, minimize the risk of cardiovascular disease (CVD) in their lives.

But this isn't an ideal world. CVD remains the number one killer in the Champlain region of eastern Ontario—an area encompassing 15,000 square kilometres and 1.2 million people. Ninety thousand residents of the region are living with cardiovascular disease and eight in 10 residents are living with one or more risk factors, including smoking, high blood pressure, unhealthy weight, physical inactivity or diabetes. In fact, three of Ontario's "hot spots" for cardiovascular disease are in the Champlain region.

All of this means that the number of people who will need the Heart Institute's services is growing—that is, unless people can be convinced to trade in their unhealthy behaviours for healthy ones and get the support they need to do so.

That's the role of the Champlain Cardiovascular Disease Prevention Network (CCPN), a partnership founded by the Heart Institute that includes the Ottawa and Eastern Ontario Public Health Units, the Champlain Local Health Integration Network and the Heart and Stroke Foundation, among others. Since 2007, CCPN has made significant gains. Among its successes are the introduction of the Ottawa Model for Smoking Cessation in 19 hospitals and to 16 family health teams in the region, development of guidelines for primary care practices to prevent and manage CVD, the "Give Your Head a Shake" Sodium Reduction Campaign and the Healthy Schools 2020 Program.

Now, under the continued leadership of the Heart Institute, CCPN is launching its second phase, with even more partners than before. The three-year program will focus on key health priority areas and gaps identified in an evaluation of the first phase.

This next phase, said Program Director Sophia Papadakis, is all about creating champions and leaders in the community and giving them the resources they need to create an environment that helps people make healthy choices. The priorities also align with provincial health priorities and initiatives, as expressed in Ontario's Health Care Action Plan and other strategies. CCPN aims to turn successful programs into models that can be replicated throughout the province and nationally.

CCPN brought together more than 110 leaders from public health, specialty care, primary care, hospitals, schools, communities, industry and academia as expert panels that examined the outcomes and successes of the initial strategy in order to shape the new one. The primary problem, Papadakis said, is that the strategy "was not living and breathing in the community." So the renewed strategy focuses on building capacity in settings across the community, including family health teams, schools and hospitals.

In the case of smoking cessation, for instance, the original strategy focused on hospitals and family health teams, reaching 20 per cent of smokers in the Champlain region since 2007. The new Regional Smoking Cessation Program will continue to expand programs in health care environments but will also expand programs into the community to reach smokers directly, targeting work sites and inner-city neighbourhoods in particular. For instance, the strategy includes a union partnership to introduce the Ottawa Model for Smoking Cessation into construction sites. The network will also reach out directly to the public through social media and other means.

For the Healthy Schools 2020 Program, nine school boards from the Champlain region, with 550 schools among them, have signed a declaration committing to bringing healthy foods into their schools and supporting more daily physical activity. That, said Laurie Dojeiji, who oversees the Healthy Schools activities for CCPN, has never happened before and is an important measure of progress.

"The emphasis really is on the environment," Dojeiji said. "We are trying to make it easier for people to adopt healthy behaviours."

To do that, the network is supporting schools with tangible ideas to help shift foods to healthier varieties and encourage more physical movement. For example, a facilitation program, which provides schools with seed funds and a dedicated facilitator, assists in initiating health-promoting activities, such as healthy snack programs or walking school bus initiatives to encourage active transportation.

Success with improving nutrition in schools in its first phase led CCPN to focus on another location where people may have limited food options: hospitals. The Healthy Foods in Champlain Hospitals Program has brought together six regional hospital CEOs who have formed a leadership table that will take responsibility for executing activities under the program.

Another priority area is primary care, supporting the health care professionals on the front lines of prevention. In its first phase, CCPN developed guidelines to help more than 1,300 primary care practitioners prevent and manage CVD in their practices. Now, through the Primary Care CVD Prevention and Management Program, the network will focus on practitioners in the region's 22 family health teams, which together reach more than 250,000 residents.

The emphasis will be on improving the delivery of preventive care through evidence-based practices and innovative models of collaborative care. The program will also work with the province's Health Links initiative, a new structure to coordinate acute care and primary care into a seamless partnership.

Activities focused on promoting healthy behaviours are common. But as Papadakis pointed out, many of these are small or poorly funded and do not succeed in reaching large numbers of people. And, she added, those targeting the most at-risk populations, such as those living in rural areas, often have the fewest resources.

"Through partnerships, we can do more together," she said. "We have more power working together, combining our budgets, our expertise and our manpower."



Dr. Naranjan Dhalla

by Bill Peters, Winnipeg, Canada

"It is a fundamental property of all forms of life to adapt to changes in environment." So begins the preface of *Cardiac Adaptations* (Springer), a 465-page tome focusing on molecular and biochemical mechanisms involved in modifying myocardial characteristics in health and disease. It is one of 3 books that Dr. Naranjan Dhalla, Distinguished Professor of Physiology, University of Manitoba, and Director of Cardiovascular Developments, St-Boniface Hospital Research, recently co-edited with international stars of cardiac research from Canada, the USA, Japan and the Czech Republic. And while adapting to change is the theme of this book, it also plays a large part in Dhalla's emergence as an icon of heart research – not only in his adopted hometown of Winnipeg or his birthplace India, but in the world.

"I had to adapt when I came to Winnipeg in 1968" says Dhalla. "I was somewhat different as a new immigrant from India. How-

ever, I always had extraordinary friends - people of great stature in science – who helped me out. When I became President of the Society (International Society for Heart Research, or ISHR) they said I would have to be more accepting of people and their ideas. Not push my agenda, but rather let others say what they have to offer. And that is when my own process of adaptation started."

Dhalla left India to begin his career in the United States in 1961, and came to Winnipeg from St. Louis in 1968 to join the University of Manitoba's Faculty of Medicine. Since then he has been honoured with a bust at the Winnipeg Citizens Hall of Fame, received the Order of Manitoba and the Order of the Buffalo Hunt from the Province of Manitoba, is a member of the prestigious Order of Canada, and a Fellow of the Royal Society of Canada.

"Dr. Dhalla's leadership has laid the foundation for the now established international reputation that the University of Manitoba and St. Boniface Hospital have as the leading research centre in cardiovascular sciences," said Dr. Digvir Jayas, Vice-President (Research and International) and Distinguished Professor. "His strength and resilience provided the impetus needed to put the Institute on the global map as a focal point for the world's cardiovascular research community."

"I suppose leadership at one time meant muscles; but today it means getting along with people."

- Mahatma Gandhi

On Wednesday, June 16, 2010 Dhalla unveiled the statue of Mahatma Gandhi which now graces the path to the Canadian Museum for Human Rights. Donated by the Indian government at Dhalla's urging, the statue was stored at St. Boniface Hospital Research Centre until its foundation could be built. Some would say Dhalla, with his philosopher style and manner, invites comparison to his famous countryman. Dhalla bristles at the comparison, then reflexively waxes philosophic... "Gandhi was a person who cannot be described in a few words. You see, there are very few people whose work is of that caliber that moves people. We scientists work very hard to create 'building blocks' for some architect to put together. One day someone smarter than me will come along and create a building out of these blocks we have made".

Through the years, Dhalla has published more than 600 full length papers in refereed journals and 161 papers in books and monographs. His research work has been cited more than 14,000 times and he has now edited 45 books on various aspects of the cardiovascular system. He has been an invited speaker at more than 300 national and international conferences and 200 institutions. He has trained more than 160 graduate students, postdoctoral fellows and visiting scientists. In his capacity as Secretary General and President of the ISHR, he was engaged in promoting the scientific basis of cardiovascular medicine for 30 years. He has been Editor-in-Chief of the major international journal *Molecular and Cellular Biochemistry* for the past 25 years and is also serving as Executive Director of the International Academy of Cardiovascular Sciences – founded by Dhalla in 1996 and established as the global headquarters in Winnipeg.

"Dhalla has built a world-class center of excellence in heart research. And like the Grey Nuns before him, he was a vital force to be reckoned with. His leadership was characterized as was theirs by a sense of purpose, a clear vision, a willingness to take risks and above all a desire to help others" says Dr. Henry Friesen, whose scientific achievements are as legendary. The Manitoba endocrinologist is also a Distinguished Professor of the University of Manitoba, also achieved the Order of Canada, and as former President of the Medical Research Council of Canada, shares many similar aims and interests. "Dhalla and his team of creative scientists have continually moved the boundaries of knowledge to bring hope through research discoveries that provided greater understanding and better recognition of the fundamental causes of heart disease. When a visiting Nobel Laureate to St. Boniface was asked how he would fashion a newly developing Research Centre, he said simply "I would replicate the Dhalla model". As a citizen of the world, his proud record of achievement has brought great honor and distinction to the man; but equally his contributions have brought

international recognition and great distinction to St. Boniface Hospital, to Manitoba and to Canada. His scientific contributions, his humanity and now his legacy will brighten the flame of hope and healing that the Grey Nuns lit when they founded St. Boniface Hospital on the banks of the Red River."

"The best way to find yourself is to lose yourself in the service of others.

Man becomes great exactly in the degree in which he works for the welfare of his fellow man."

- Mahatma Gandhi

Says Dhalla, "In research, all you do is learn. You do an experiment, gain some observations, you accumulate some data and make some analyses - right, or wrong. After that it is important to share your knowledge with other people. There is no sense in keeping a lamp in a cubby hole; bring it into a room so it can help others see."

Initially, Dhalla wanted to be a film director and wrote his first manuscript in India before he was 18. "In a way, I am doing what I set out to do. I think what I am doing is also producing a film. I wanted to be a good scientist, but circumstances put me in the position to be a director. In fact the seed of directorship was sewn in St. Louis (1968), when I was given the assignment to evaluate 32 universities, and produce a report. I think that experience finished my career as an actor, and so I became a director. And in doing so, I have trained extraordinary individuals who have become much better than me. In this way my whole life has been a film, and it has been a profound experience."

Major discoveries, or "eurekas" if you will, are scarce in the world of basic cardiovascular research to which Dhalla has dedicated his life. Given the seemingly eternal pursuit of answers to the infinite questions of the human heart, perhaps Gandhi had this in mind when he said **"Glory lies in the attempt to reach one's goal and not in reaching it".**

Dhalla does not appear to concern himself as much with achieving the ultimate goal of curing heart disease, than in helping others adapt to the rapid changes in technology and communication that challenge today's young investigators. "Modern technology has changed tremendously and we have made tremendous progress. It is absolutely essential that the cardiovascular physicians of tomorrow should know how to adapt - knowing what was done in the past, what is being done currently, and what needs to be done in the future. I feel that there has been a stalemate over the past few years, and I think the solution lies in getting these very talented people together to discuss these challenges."

"I have a saying on the door leading into my office," says Dr. Grant Pierce, Executive Director of Research for St Boniface Hospital and a Professor of Physiology at the University of Manitoba. "It reads: 'You have the rest of your life to remember but what you have to remember depends upon what you do today.' Dr. Dhalla has much to remember because he has done so much. He continues to be one of our most productive scientists - editing three books is just one example. He has made the rest of us adapt to the idea that there is no age when a career in science ends but it is only dependent upon your willingness to work hard and think creatively. He continues to do that with an enthusiasm that has no equal."

EDITOR'S NOTE:

The titles and editors of the above-mentioned books are:

Cardiac Adaptations: Molecular Mechanisms. Ed. by B Ostadal and N S Dhalla, Springer Science+Business Media, LLC, New York

Cardiac Remodeling - Molecular Mechanisms. Ed. by B I Jugdutt and N S Dhalla, Springer Science+Business Media, LLC, New York

Biochemical Basis and Therapeutic Implications of Angiogenesis. Ed. by J L Mehta and N S Dhalla, Springer Science+Business Media, LLC, New York

PEOPLE AND PLACES



IACS FELLOW honoured by Canadian Society for Pharmaceutical Sciences

Dr. John McNeill, Professor and Dean Emeritus, Faculty of Pharmaceutical Sciences, University of British Columbia has been awarded the Canadian Society for Pharmaceutical Sciences Lifetime Achievement Award. This award has been presented only three times and recognizes Dr. McNeill's significant contributions to pharmaceutical sciences research. Dr. McNeill joined the Faculty of Pharmaceutical Sciences in 1971, and served as dean from 1985 to 1996. He is the author of

more than 500 manuscripts and review articles, over 500 abstracts and has edited five books. His work has been cited more than 12,000 times. He has received numerous awards for teaching and research over the course of his career. He has been elected to the International Academy of Cardiovascular Sciences, the Royal Society of Canada and the Canadian Academy of Health Sciences To read Dr. McNeill's full biography, please visit www.pharmacy.ubc.ca/researchers/john-mcneill.

The perils of sitting down

ONLINE at <http://www.economist.com>



WINSTON CHURCHILL knew it. Ernest Hemingway knew it. Leonardo da Vinci knew it. Every trendy office from Silicon Valley to Scandinavia now knows it too: there is virtue in working standing up. And not merely standing. The trendiest offices of all have treadmill desks, which encourage people to walk while working. It sounds like a fad. But it does have a basis in science.

Sloth is rampant in the rich world. A typical car-driving, television-watching cubicle slave would have to walk an extra 19km a day to match the physical-activity levels of the few remaining people who still live as hunter-gatherers. Though all organisms tend to conserve energy when possible, evidence is building up that doing it to the extent most Westerners do is bad for you—so bad that it can kill you.

That, by itself, may not surprise. Health ministries have been nagging people for decades to do more exercise. What is surprising is that prolonged periods of inactivity are bad regardless of how much time you also spend on officially approved high-impact stuff like jogging or pounding treadmills in the gym. What you need instead, the latest research suggests, is constant low-level activity. This can be so low-level that you might not think of it as activity at all. Even just standing up counts, for it invokes muscles that sitting does not.

Researchers in this field trace the history of the idea that standing up is good for you back to 1953, when a study published in the *Lancet* found that bus conductors, who spend their days standing, had a risk of heart attack half that of bus drivers, who spend their shifts on their backsides. But as the health benefits of exercise and vigorous physical activity began to become clear in the 1970s, says David Dunstan, a researcher at the Baker IDI Heart & Diabetes Institute in Melbourne, Australia, interest in the effects of low-intensity activity—like walking and standing—waned.

Over the past few years, however, interest has waxed again. A series of epidemiological studies, none big enough to be probative, but all pointing in the same direction, persuaded Emma Wilmot of the University of Leicester, in Britain, to carry out a meta-analysis. This is a technique that combines diverse studies in a statistically meaningful way. Dr Wilmot combined 18 of them, covering almost 800,000 people, in 2012 and concluded that those individuals who are least active in their normal daily lives are twice as likely to develop diabetes as those who are most active. She also found that the immobile are twice as likely to die from a heart attack and two-and-a-half times as likely to suffer cardiovascular disease as the most ambulatory. Crucially, all this seemed independent of the amount of vigorous, gym-style exercise that volunteers did.

Correlation is not, of course, causation. But there is other evidence suggesting inactivity really is to blame for these problems. One exhibit is the finding that sitting down and attending to a task—anything from watching television to playing video games to reading—serves to increase the amount of calories people eat without increasing the quantity that they burn. Why that should be is unclear—as is whether low-level exercise like standing would deal with the snacking.

A different set of studies suggests that simple inactivity by itself—without any distractions like TV or reading—causes harm by altering the metabolism. One experiment, in which rats were immobilised for a day (not easy; the researchers had to suspend the animals' hind legs to keep them still) found big falls in the amount of fats called triglycerides taken up by their skeletal muscles. This meant the triglycerides were available to cause trouble elsewhere. The rats' levels of high-density lipoprotein (HDL) fell dramatically as well. HDL is a way of packaging cholesterol, and low levels of it promote heart disease. Other studies have shown the activity of lipoprotein lipase—an enzyme that regulates levels of triglycerides and HDL—drops sharply after just a few hours of inactivity, and that sloth is accompanied by changes in the activity levels of over 100 genes.

Papers which focus on people rather than laboratory animals have found similar effects. Happily, this research also suggests the changes can be reversed by small amounts of fairly relaxed activity. A study published last year by Dr Dunstan found that breaking up prolonged periods of sitting with two minutes of walking every 20 minutes made a big difference. After feeding his volunteers a sugary meal, he discovered that people who had been walking in this way had blood-glucose levels almost 30% lower than those of people who had remained seated.

For some scientists, this combination of epidemiology, animal experiments and human trials suggests that light-to-moderate exercise—standing up, walking around and the like—is something qualitatively different from an energetic, high-intensity workout. But not everyone is convinced. Many of the human studies are small-scale. (Dr Dunstan's paper, for example, involved just 19 participants.) And not every study that has gone looking for the ill effects of inactivity has found them.

Still, the potential size of the problem means not everyone is prepared to wait for definitive proof. Sellers of standing desks are, naturally, jumping on the latest research findings to advertise their wares. And it is surely only a matter of time before the first law suit from a sickly cubicle slave reaches court.

World Heart Day

Celebrated in Winnipeg
Thursday, October 3, 2013



An incredible
talk by
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E. Douglas Wigle remembered as a father of Canadian cardiology

by Lisa Fitterman ONLINE from The Globe and Mail



Cardiology interns at Toronto General Hospital had to be prepared when they did patient rounds with Dr. E. Douglas Wigle, lest they get what was known as the “Wigle look.” Pity the poor soul who did not have blood-work results perfectly memorized, or was not able to clearly and logically present case histories without notice. No words were exchanged – Dr. Wigle simply cast his eyes toward the offending intern, managing to convey disdain, disappointment and impatience all at the same time. “He didn’t have to get angry or shout,” said Dr. Harry Rakowski, a cardiologist who trained under Dr. Wigle in the mid-1970s and now holds a research chair named for his mentor. “He was able to say, ‘You should have known that,’ without saying a thing.”

Of medium height, with the broad shoulders of the varsity quarterback he once was and a fondness for sayings such as “gird your loins and get on with it,” Dr. Wigle, who died on July 3

of complications from a neurodegenerative disease at the age of 84, was known as a father of Canadian cardiology. When he began his practice at Toronto General Hospital in 1960, he noticed that some of his patients had a largely unknown heart condition – hypertrophic cardiomyopathy (HCM) – where the heart muscle is excessively thick, impeding or preventing the flow of blood to the rest of the body. While the condition can strike at any age, it is best known for affecting people under the age of 30, especially athletes who suddenly drop dead even though they seem to be in the best of shape. Often, there are no symptoms until that sudden, dramatic death. Dr. Wigle made research into the condition a cornerstone of his life’s work, producing about 120 peer-reviewed scientific presentations and 88 manuscripts on the topic. Despite doctors who thought otherwise, he insisted that the too-thick muscle blocked blood from leaving the heart in many of the cases; through a landmark series of experiments, he was proven right and ended up making Toronto General Hospital an international centre for research, education and treatment of HCM.

“If you said the name ‘Dr. Wigle’ anywhere in the world in cardiology circles, people would know who you were talking about,” said Dr. Paul Dorian, head of cardiology at the University of Toronto. “He was one of only two or three cardiologists who put HCM on the map. There are a number of cardiologists from around the world who came to learn what he was doing and took back that knowledge to their own countries.” Along the way, Dr. Wigle built Canada’s first all-encompassing cardiac unit. At a time when there were no echocardiograms, CT scans or magnetic resonance imaging machines to provide pictures, he taught his students to trust their ears, their touch and their instincts. “Making a diagnosis was more challenging back then. Heart surgery was relatively new, as was heart catheterization,” said Dr. Rakowski, referring to a procedure where a long, thin tube known as a catheter is inserted into a blood vessel and threaded to the heart. “He had a commanding presence, an extensive knowledge and an outstanding bedside manner. We would watch him listening to heart sounds and murmurs, feeling pulsations in the neck and chest, all while setting patients at ease.” A storied, sometimes feared, teacher, Dr. Wigle headed the cardiology department at Toronto General Hospital from 1972 to 1986. He insisted that his students become experts with the stethoscope despite the imaging technology that was becoming more available. “He would have said, ‘If you don’t know how to use your eyes and your ears, you will never become a good diagnostician,’” said Dr. Dorian. During his fellowship year, Dr. Rakowski recalled several cases in which he strongly disagreed with his mentor’s conclusions, which were drawn from a physical examination. “Doug would listen to my point of view. In the end, of course, I was never right,” Dr. Rakowski said. But that didn’t mean Dr. Wigle, who was made an Officer of the Order of Canada in 2007, shied away from technology. Instead, he used it as an adjunct to his own senses, even making sure that Dr. Rakowski went to Stanford University to learn about echocardiography, then bringing him back to start the echo lab in Toronto. “Before, he could only hear. Now, he could see,” Dr. Rakowski said. “Still, when he called and asked if you could please review your study, you knew he meant that he disagreed with what you had seen. The funny thing was, he was almost always right. It was the ‘echo’ that was read wrong.”

Ernest Douglas Wigle was born in Windsor, Ont., on Oct. 30, 1928, the second of Dr. Douglas Wigle, a surgeon, and Marjorie Lyon’s three children. Known as Doug, he was an A student with a perfect visual memory. He played the trumpet and excelled at any sport he tried, even basketball, despite his smaller stature. From his parents, he learned how to “square his shoulders” and persevere. During the Depression, life may not have been easy, but the best thing to do was take a deep breath and push through it, preferably with flying colours. He combined his studies with leisure activities in seemingly effortless fashion. His Delta Kappa Epsilon, or Deke, fraternity brothers at the University of Toronto never understood how he could play billiards at parties the night before a big exam and still ace the test the next morning. But he did, over and over again. Upon graduation in 1953, he won the gold medal as the top student in his class, then went on to seven years of specialized study in Canada, England and the United States before returning to practise in Toronto. While a medical student, he took several months off one summer and travelled to Europe. There, major art book in hand, he visited galleries and museums, starting a lifelong appreciation. It didn’t matter if a work was French impressionist, German expressionist or postmodern – he loved it all. The first painting he saw, a portrait by Modigliani at the National Gallery, stuck with him; years later, when at the gallery with his wife, Anne, he noticed it was missing. “Doug being Doug, he marched right over to the director’s office and asked where it was,” Mrs. Wigle recalled. “It turned out it was on loan.”

Every Christmas, the couple carefully unwrapped an ornament for their tree – a little bear – that was a gift from a patient in Northern Ontario. In an accompanying note, the patient had written that the bear reminded her of Dr. Wigle – fierce, rough and protective. Like his father before him, who would march through the family’s cottage in the early morning calling out “swim time” so his offspring could have a dip before breakfast, Dr. Wigle often woke his three sons and two daughters with a rousing rendition on his trumpet of When the Saints Go Marching In at the cottage on Georgian Bay he helped build. “It wasn’t like roll call,” said his youngest, Bruce Wigle. “We probably should have been out of bed anyways. It was fun.” Dr. Wigle retired in 2010 after being diagnosed with a neurodegenerative condition that affected the frontal lobe of his brain. He leaves his wife of 25 years; his children, Doug Jr., Cam, Lindy, Jill and Bruce; their mother, Mary (Marnie) Wigle; his stepchildren Peter and Katie Little; three grandchildren and three stepgrandchildren. Besides his propensity for exercise, tireless work ethic and infectious guffaw, Dr. Wigle was predictable in other ways. He was a “G-man” who liked his Globe and Mail in the mornings and a gin and tonic when he got home at night, usually around 8:30 p.m., after he had finished with his office, then gone down to the cardiology ward and emergency department to speak with patients’ family members. “He would always call me around 7 p.m. and say he was wrapping up so what’s for dinner,” said Mrs. Wigle. “I wouldn’t budge because I knew it would still be at least an hour and a half before he got home. He was that dedicated to his patients.”

Canada's Wild Blueberries Save Lives!

by Teri Moffatt, Winnipeg, Canada



Agnes' Zaida Ivan taught her about the joys of picking and eating blueberries before she was 2!

In her article in the Winnipeg Free Press "INTO THE WILD BLUE YONDER" on July 31, 2013, Allison Gilmour referred to a 2010 editorial for the Globe and Mail, by well-known environmentalist David Suzuki who made a good case for why the wild blueberry should be declared Canada's national plant. He cited the seasonal social ritual of picking the berries, with families from Newfoundland to the Yukon walking with tin pails, on the lookout for good patches in low-lying bushes. He pointed to the wild blueberry's ties to the land and to history. First Nations peoples have eaten blueberries for centuries, boiled up for tea, pounded into dried meat, or smoked so their goodness can be preserved for winter. Dr. Suzuki made a convincing health argument for the all-Canadian blueberry. It's a nutritional powerhouse, bursting with antioxidants, fibre, vitamins C and K, potassium, calcium and manganese. Grizzly bears, as big as they are, are happy to subsist on blueberries during the peak of the berry season.

The 2013 growing season started late in Northern Ontario and Manitoba but much to everyone's delight the conditions have been perfect for a bumper crop of blueberries. Not only do these sweet berries satisfy the

taste buds but they are also nutritional superstars. They are high in vitamins and minerals, including manganese which plays an important role in bone health and metabolism. Blueberries are also known for their anthocyanins - the colorful antioxidant pigments that give berries their wonderful blue, purple, and red colour. However, there are also a wide variety of other phytonutrients found in blueberries which function both as antioxidants and as anti-inflammatories and are responsible for many of the health benefits we get from regular consumption of blueberries. Because some of the blueberry's nutrients are concentrated in the skin, wild blueberries are also gram for gram more nutritious than cultivated ones. A cup of these small but mighty berries has more skin than a cup of marble-sized berries, and thus more nutrients.

Cardiovascular Benefits

The benefits of blueberries have been especially well documented with respect to the cardiovascular system. Increased blueberry consumption has been shown to reduce total cholesterol, raise HDL cholesterol, lower triglycerides and to help protect the blood components, such as LDL cholesterol, from oxidative damage that may eventually lead to clogging of the blood vessels. The United States Department of Agriculture recently rated 100 foods on their antioxidant power, and blueberries received an "A" rating. They also suppress inflammation, which is a key driver of coronary artery disease.

Interestingly, the positive effects of blueberry consumption increase in a dose-dependent manner. One cup daily is good but 2 or 3 are better!

High blood pressure is also a risk factor in heart disease. In studies with males and females of a variety of ages, routine blueberry intake supported healthy blood pressure. In individuals with high blood pressure, blueberry intake significantly reduced both systolic and diastolic blood pressure.

Also recent research on an enzyme called nitric oxide synthase (NOS), which has two forms, the inducible form (iNOS) which is associated with increased risk of inflammation and the endogenous form (eNOS) which is usually associated with better balance in cardiovascular function, have shown that daily blueberry intake can result in increased eNOS activity.

Blood Sugar Benefits

Persons diagnosed with type 2 diabetes, metabolic syndrome, insulin resistance, and obesity often have difficulties with respect to maintaining blood sugar balance. Blueberry intake in these patients has a favorable impact on blood sugar regulation. Although blueberries are not particularly low in terms of their glycemic index (GI) value they have a good amount of fiber which is helpful in blood sugar regulation.

Cognitive Benefits

Research has also shown that daily blueberry consumption can improve scores on tests of cognitive function such as memory. Studies have also suggested that blueberries may be able to postpone the onset of other cognitive problems frequently associated with aging. This cognitive protection is most likely due to the antioxidants and polyphenolic compounds in blueberries which have the ability to lower oxidative stress and inflammation in nerve cells, which are at high risk of damage. By lowering the risk of oxidative stress in our nerve cells, blueberries help us maintain healthy neuronal communication and healthy cognitive function.

So why not eat blueberries. Maybe this little blue wonder will help keep you healthy longer. They are delicious by the handful, added to your smoothie, oatmeal or yogurt. They are fabulous baked in muffins or pie. And studies have shown that the nutrients in blueberries are similar in fresh, frozen or dried berries. So if you have the chance to stock up during growing season then you can benefit the whole year round.



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As we continue the 12th year of publication of CV Network, The Executive of the IACS expresses deep gratitude to all who have served this noble endeavour. We specifically thank those who have worked diligently on the Editorial Board. We recognize that we need to add some new ideas so we welcome volunteers for a new Editorial Board.

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