

CV network

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President-Elect James Willerson Recorded His Vision to Introduce the GLOBAL NETWORK TO FIGHT CARDIOVASCULAR DISEASES

by Ivan Berkowitz, Winnipeg, Canada



Dr. Jim Willerson's talk was presented to more than 2,500 delegates at various events during the IACS World Congress in India and subsequently online at <http://www.heartacademy.org/heart.flv.php>

Meetings of Academy leaders have been held in Baroda, India during the World Congress and in New Orleans, U S A during the Sessions of the American College of Cardiology. With other input as well, a Project Plan has been developed. We welcome all contributions to building the success of the Global Network.

The Executive Summary of the Plan follows:

Cardiovascular Diseases (CVD), including heart disease, stroke and vascular abnormalities cause over 18 million deaths annually world-wide (35 per minute) making CVD the Number One Killer. It has been projected that by 2030, 23.6 million people will die annually from cardiovascular diseases. In the USA, more women have died from CVD than men every year since 1984, a trend which has become global.

Even children face congenital heart disorders and hypertrophic cardiomyopathy. They develop heart problems from diseases like rheumatic fever and Chagas Disease. They also develop risk factors, particularly obesity, which are manifested throughout their lives. Further, WHO estimates that low- and middle-income countries are disproportionately affected: over 80% of global CVD deaths occur there proving that CVD is no longer a “rich white man’s disease”.

The burden of CVD should not be measured by deaths alone since CVD leads to overwhelming economic costs as well as human burdens. The staggering costs of CVD in the USA, including health care expenditures and lost productivity from deaths and disability, were projected to be more than USD 500 billion in 2010, according to the American Heart Association and the National Heart, Lung and Blood Institute. CVD cost the EU health care systems just under USD 260 billion, representing a cost per capita of more than USD 500 per annum, which accounts for 10% of the health care expenditure across the EU. Informal care of patients and productivity losses exceeded another 115 billion. Already, researchers have estimated that between the developing economies of Brazil, India, China, South Africa and Mexico, 21 million years of future productive life are lost each year to CVD. These are only the economic numbers. The true cost in human terms of suffering and lost lives is incalculable.

Thus, it is of paramount importance that global efforts be made to reduce the exploding burden of this pandemic. Our new program will be the GLOBAL NETWORK TO FIGHT CARDIOVASCULAR DISEASES. The International Academy of Cardiovascular Sciences (IACS) is structured with an international executive and directors, with headquarters in Winnipeg, Canada, to promote Cardiovascular Education, Research and Patient Care. IACS possesses essential elements of international connectivity, diverse expertise and established communication links to launch this dynamic new initiative to lower the effects of CVD.

President-Elect James Willerson, the cardiologist of exceptional standing; IACS Founder and CEO, Dr. Naranjan S. Dhalla, world-renowned cardiovascular scientist; and current President Sir Magdi Yacoub, regarded widely as the world’s pre-eminent cardiac surgeon, have been developing the Global Network Steering Committee to provide the leadership for the new initiative to extend the IACS Global Network into each and every country (using the United Nations as our model). Drs. Willerson, Dhalla and Yacoub have trained hundreds of people who have become outstanding in their pursuit of progress against cardiovascular diseases. Other members of the Steering Committee will include recognized experts with experience in mentoring international protégés.

We will select one Ambassador from each emerging country. In their country, the Ambassadors will facilitate activities of the Network. They will identify promising medical personnel and researchers including young people as well as mature professionals with potential to become leaders in the delivery of heart and vascular health. Those nominated to be Global Network Scholars will be considered through international screening by the experts on the Global Network Steering Committee. Those selected will pursue advanced translational cardiovascular research training in centers of excellence in highly regarded laboratories in the USA, Europe, and Canada. The Scholars will be committed to develop extraordinary skills to discover new knowledge to be translated into early detection and treatment to reduce the morbidity and mortality from CVD on their return to their homes where we will encourage and assist their building of local centers of excellence for future education and training.

The development of the potential of promising people through training and education to fight these deadly diseases deserves, at the very least, the same fervor and financial support as that associated with dealing with AIDS, cancer, and communicable diseases. The Global Network initiative will require significant financial commitment from international donors and foundations, dedicated individuals and home countries with concern about the growing pandemic of cardiovascular diseases.

Extraordinary Global Conference in Three Centres in India

4th World Congress of International Academy of Cardiovascular Sciences (IACS) was organized from 1st to 6th February 2011, jointly by Maharaja Sayajirao University, Vadodara; Anand Pharmacy College, Anand; and Care Institute of Medical Sciences, Ahmedabad.

by Tejal Gandhi, Anand, India and Anita Mehta, Ahmedabad, India

The exceptional organizing team:



Prof. Ramesh K. Goyal
Conference Director
Vice Chancellor
M.S. University, Vadodara



Dr. Keyur Parikh
Conference Chairman
CIMS-3C-CON 2011



Dr. Milan Chag
Scientific Chairman
CIMS-3C-CON 2011



Prof. Anita A. Mehta
Co-ordinator,
L M College of
Pharmacy, Ahmedabad



Prof. Tejal R Gandhi
Co-ordinator,
Anand Pharmacy
College, Anand



Dr. V.C. Chauhan
Chairman,
Scientific Committee

Dr. Ramesh K. Goyal (Vice-chancellor, M.S. University, Vadodara), Chairman of the conference along with Dr. Anita Mehta (Professor, L.M College of Pharmacy, Ahmedabad) and Dr. Tejal R. Gandhi (Principal, Anand Pharmacy College, Anand) coordinated the first three days scientific programme. Mr. S.P. Rathod and Dr. Kirti Patel had shouldered responsibilities of organizing secretary and joint organizing secretary respectively and provided excellent hospitality and social programme to the delegates. The congress was attended by over 100 eminent speakers, practicing cardiologists, cardiovascular scientists and pharmacologists from 22 countries across the world. Overwhelming response was received from more than 1800 participants.

The main conference was preceded by a Cardiac Medical Check-up Camp organized by Faculty of Social Work MSU with Government Medical College, S.S.G. Hospital and Sterling Hospital, Vadodara. This Camp included awareness lectures and medical check up of over 500 patients.

The theme of the Congress **BRIDGING THE GAP: BASIC SCIENCE AND CLINICAL PRACTICE** generated considerable interest among the scientists and practicing clinicians along with the community and social scientists. The conference also aimed to surface new concepts and facts in the field of cardiovascular research; exchange ideas, research and cooperation beyond boundaries, and create an atmosphere of learning and knowledge. Dr V.C. Chauhan and Dr Darshan Banker, the leading cardiologists of Vadodara gave keynote addresses in the conference. The lectures delivered during the 3 day conference focused on recent findings in the field of cardiovascular sciences, delving into topics related to molecular mechanisms, clinical complications, stem cell research, nutrition, novel mechanisms and targets and many others.

The first two days of the conference were scheduled at M.S. University campus, Vadodara and began with the inauguration ceremony. The function was inaugurated by Shri Jaynarayan Vyas, Honourable Minister of Health and Family Welfare, Gujarat, and Chancellor of M.S.University, Dr. (Mrs) Mrunalini Devi Puar. During the inaugural program, Prof. Naranjan S. Dhalla announced various awards of IACS. Dr. Goyal was bestowed upon with Lifetime an Achievement Award for the services offered by him for the activities of IACS. Dr. Gary Baxter, from Cardiff, Wales, N.S. Dhalla Prize Awardee, gave the plenary lecture on "Cardiac peptides in myocardial ischemia reperfusion". The Howard Morgan Award was conferred in absentia on Dr. Subodh Verma, Canada. Prof Zoltan Papp from Hungary was given Makato Nagano Award and Dr Grant Pierce was presented with Norman Alpert Award[insert photo 5736]. Also, Prof. Ernesto Carafoli from Italy was presented with his 2009 IACS highest honour of Medal of Merit for Outstanding Achievements in Cardiovascular Education & Research. Prof S.K.Gupta, President of India Section of IACS announced Prof Manjeet Singh Oration Award to Dr B. Ostadal. Czech Republic and Prof Wahi Oration Award to Prof Nirmal K. Ganguly, India. Honourable Minister of Health Shri Jay Narayan Vyas in his inaugural speech expressed his commitment on behalf of the Government for the need of taking steps for prevention of cardiovascular diseases in India and encourage research in cardiology with multidisciplinary approach.

Prof N.S.Dhalla, Canada gave a plenary lecture on "Mechanisms of increase in intracellular Ca²⁺ [should be small elevated +] in ischemic heart disease". "Mitochondrial function and protein kinases in cardiac protection" was the theme for the lectures by Dr. Asher Shainberg, Israel along with Dr. Adriana Adameova, Slovak Republic; Dr. Jin Ouchi, USA; and Dr. Suresh Tyagi, India. There was another parallel session on the theme of changing trends in coronary diseases. The lectures were given by Dr. Petr Ostadal, Czech Republic; Dr. J. L. Mehta, USA; Dr. K.Y. Chaula, India; Dr. Gaurang Shah, USA; Prof. Andras Varro, Hungary; and Dr. Sudhir Khushwaha, USA continued lectures on associated clinical practice in cardiology. There were extensive deliberations on "Modulation of subcellular mechanisms in vascular injury" by Dr. Dennis McNamara, USA; Dr. Madhu Anand-Srivastava, Canada; Dr. Ashok Srivastava, Canada; and Dr. C.C.Kartha, India.



(L-R) B. Ostadal, S. Gupta, P. Singal, F. Kolar, G. Pierce, R. Goyal, D. McNamara, J. Slezak, C. Kartha and N. Dhalla

On the eve of the commencement of the conference, the cultural program was organized by the faculty of performing arts, M.S. University which depicted the culture of Gujarat state and India as a whole. The recorded vision of Dr. James Willerson, President-Elect, IACS was presented to all those who attended the program.

A brief meeting was held including IACS council members in Vadodara. Naranjan Dhalla gave a report of activities around the world. Grant Pierce reported on "A New Strategic Direction for the Academy" (presented in full in CV Network 10/1. pages 10/11). Ivan Berkowitz introduced the Global Network To Fight Cardiovascular Diseases.

On the second day of the event, Prof. Manjeet Singh Oration lecture was given by Dr. Bohuslav Ostadal, Czech Republic and Prof. Wahi Oration lecture by Prof. N.K. Ganguly, Director General, ICMR. Dr. Pawan Singal, Canada threw light on cytokines in heart failure. Angiogenesis and stem cell research was the theme for the next symposium with lectures by Dr. Paulette Mehta, USA; Dr. Hari Sharma, Netherlands; Dr. Dipak Das, USA; and Dr. R.R. Bhonde, India.

Dr. N.S. Dhalla Young Investigator Award in Basic Sciences and sessions of Dr. N.K. Ganguly Young Investigator Award in Clinical Cardiology India Sections of IACS were held, where 21 papers were presented. The Ganguly Award recipient was Mr. Bhavani Shankar Sahu, PhD scholar, Indian Institute of Technology Madras, Chennai of the Department of Biotechnology, Cardiovascular Genetics Laboratory. The title of his talk was: "Identification and functional characterization of genetic polymorphisms in the physiological anti-hypertensive peptide 'catestatin' in an Indian population".

The Dhalla Award Recipient was Miss Shraddha Bhadada, Institute of Pharmacy, Nirma University, Ahmedabad. The title of her talk was: "Evaluation of tephrosia purpura alcoholic extract on the complications associated with streptozotocin- induced type-I diabetes mellitus".



Dr. S.K. Gupta presented award Bhavani Shankar Sahu, assisted by Dr Ramesh Goyal (R)

There was a session focused on maternal nutrition and cardiac diseases. The deliberations discussed prenatal exposure to maternal low protein diet induces cardiac dysfunction in post-natal life by Dr. Paramjit Tappia, Canada; Dr. S.K. Cheema, Canada; Dr. S.K. Gupta, India; and Dr. V. Santaram, India. Dr. Tejal Gandhi, India; and Dr. Sushil Jain, U.S.A also gave lectures in this session. Another session was on ischemia reperfusion injury in diabetes with Dr. Jan Slezak, Slovak Republic; Dr. S.K. Mauik; India; Dr. Ram Raghubir, India; and Dr. S.S. Agrawal, India as the speakers.

The third day began at a nearby small city known for being the home of Asia's largest milk cooperative Amul Dairy and The National Dairy Development Board of India. Anand Pharmacy College (APC) is one of the renowned institutes of Gujarat that aims to facilitate advancement of pharmaceutical education and multi-pronged development by interaction of multidisciplinary research activities in the field of pharmacological sciences to cater to the health needs of society.



Dr. Ernesto Carafolli, Italy

The event starting with opening ceremony of the Pharmaceutical Research Center at Shri Ramakrishna Seva Mandal Campus, which was inaugurated by Dr. N. S. Dhalla, Executive Director IACS, Winnipeg, Canada.

All the speakers, guests and delegates were then taken to the Madhuban resort, a beautiful venue for the scientific program. Novel mechanisms and targets in cardiac failure were discussed by Dr. Nilanjana Maulik, USA; Dr. Gania Kessler-Ickson, Israel; Prof. Guy Vassort, France; and Dr. Tanya



Shri. Hemantbhai Patel, Dr. B. Ostadal and Dr. S. K. Gupta



Faculty at the Anand College of Pharmacy Symposia

Ravingerova, Slovak Republic. Dr. Belma Turan, Turkey; Dr. Pallab Ganguly, Saudi Arabia; Dr. Frantisek Kolar, Czech Republic; Dr. Raizada, USA; Dr. Anita Mehta, India; and Dr. Lindsay Brown, Australia also delivered lectures on the same theme in the post lunch session.

The plenary lecture on calcium and the heart with some personal recollections by Dr. Ernesto Carafolli, Italy was one of the most exciting offerings. Alterations in calcium mechanism in heart failure was the theme of the parallel symposium, and Dr. Mohamed Boutjdir, USA; Dr. Attila Ziegelhoffer, Slovak Republic; Dr. S.S. Sharma, India; and Dr. B.P. Srinivasan, India presented novel research work.

The basic science session was concluded with valedictory function presided by Shri. Hemantbhai Patel, President of SRKSM, Dr. B. Ostadal as chief guest, guest of honor Dr. Harish Padh, Vice-Chancellor Sardar Patel University, Vallabh Vidhyanagar, Prof. Naranjan Dhalla, Invitee Smt. Jyotsna Ben Patel Honorary secretary of SRKSM, Dr. R.K. Goyal, Dr. Anita Mehta and Dr. Tejal Gandhi, Principal, Anand Pharmacy College. Smt. Jyotsnaben welcomed everybody for the valedictory function, followed by brief address given by Dr. Mehta and Dr. Goyal. Prof. Dhalla bestowed his blessings and good wishes. He recognized the grand success and arrangements made for the conference. Other delegates also came forward to express their views about the conference. Dr. Harish Padh, Dr. B. Ostadal and Shri Hemantbhai also spoke about the city, university and the conference. The function was formally ended by Dr. Tejal Gandhi with a vote of thanks. To her team of organizers and collaborators and concluded with a promise for many more meetings and seminars in the field of cardiovascular sciences.

The conference at Ahmedabad (February 4-6) had major focus on clinical practice in cardiology with over 100 lectures by different experts in parallel sessions as well as dinner meetings. In addition to the presentation on latest breaking clinical trial reports, several reports related to coronary arteries, hypertension, heart failure and peripheral artery diseases were discussed. A few sessions were devoted to the latest practices in diagnosis and treatment of these diseases. On the last day there were certificate courses for internal medicine, echo-cardiography, critical care, neonatal pediatric practice and group practice. On a multi-screen internal showing, the recorded vision of Dr. James Willerson, President-Elect, IACS was repeated for all of the delegates. There was an Exhibition in which IACS had a display. During the meeting at Ahmedabad, an IACS Lifetime Achievement award was presented to Dr. Keyur Parikh and an IACS Distinguished Service Award was conferred on Dr. Milan Chag.



C I M S hosted an extraordinary welcoming reception in the grounds of the Hospital

“4th World Congress of IACS kicks off at MSU today”

online from THE TIMES OF INDIA, February 1, 2011



Photo taken at News Conference in Vadodara, India

VADODARA: “Many Aryans think that heart diseases are a ‘Rich White Man’s disease’. But, it is a fact that 18 million people every year die due to heart diseases, meaning 35 persons every minute. Of these, 80 per cent are from emerging nations,” said Ivan Berkowitz, Heart Health Scholar in Canada.

The Fourth World Congress of the International Academy of Cardiovascular Sciences (IACS) will kick off at Maharaja Sayajirao University on Tuesday. For the first time, the World Congresses of the IACS is being organised in India. Brazil, Japan and Denmark have hosted the earlier World Congress.

“The theme of the congress this time is ‘Bridging the Gap: Basic Sciences and Clinical Practice,’” MSU vice-chancellor

professor Ramesh Goyal, also the chairman of the conference, told media persons on Monday. “It will generate considerable interaction among the cardiovascular scientists and practicing clinicians along with the community and social scientists.”

“While MSU will be hosting the first two days of the World Congress at C C Mehta Auditorium, the third day of the conference will be organised by Anand Pharmacy College at Madhubhan Resort. Later, the World Congress will be held at Tagore Hall in Ahmedabad between February 4 and February 6,” said Goyal, adding that a total of 60 speakers from 17 countries will be participating in the World Congress. At least 40 speakers will be addressing sessions during the first three days.

State to set up ultra modern heart research institute

online from THE TIMES OF INDIA, February 2, 2011

VADODARA: Gujarat health minister Jay Narayan Vyas said the state government will set up a modern state-of-the-art heart research institute. Vyas made this announcement at the inauguration function of the fourth World Congress of the International Academy of Cardiovascular Sciences (IACS) at M S University here on Tuesday.

The announcement was in response to a suggestion made by executive director of IACS and member of the Order of Canada Dr. Naranjan S Dhalla. While announcing that the state was keen to set up such a research institute, Vyas asked IACS to partner the state government in the project. Vyas said state government is likely to start a programme to control the vascular disease and diabetes. He pointed out that nearly 1.5 million babies are born with congenital heart diseases in the country.

“By 2020, cardiovascular diseases are expected to spread in epidemic proportion. We have reached a point where all the existing drugs are not working out well to prevent mortality caused due to these diseases. So prevention should be given much more attention,” Dhalla pointed out in his speech, stressing that each country needs to set up a separate cardiovascular think tank.

MSU vice-chancellor professor Ramesh Goyal was conferred lifetime achievement award at the World Congress, being held for the first time in the country.

MSU is hosting the first two days of the World Congress at C C Mehta Auditorium. The third day of the conference will be organised by Anand Pharmacy College after which the conference will be held at Tagore Hall in Ahmedabad between February 4 and February 6.

As we begin the 10th 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 have created a new Editorial Board as follows.

CV NETWORK Editorial Team:

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Ivan Berkowitz

Assistant Editor:

Alison Muller, Canada

Editorial Board:

S. S. Agrawal, India

Rui M. S. Almeida, Brazil

M. Balasubramanyam, India

Dragan Djuric, Serbia

Wafia Etieba, USA

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Otoni Gomes, Brazil

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C. C. Kartha, India

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Pram Tappia, Canada

Belma Turan, Turkey

Enn Seppet, Estonia

Stephen Schaffer, USA

Qiming Shao, China

Nobuakira Takeda, Japan

Teruhiko Toyo-Oka, Japan

Agnes Vegh, Hungary

During the 4th World Congress of the IACS, in India, a special session was held in Vadodara where six distinguished investigators were recognized. This ceremony was presided over by Honourable Jay Narayan Vyas, Gujarat Health Minister. Another ceremony was held in Ahmedabad where awards were bestowed on two highly acclaimed physicians.

Dr. Ramesh Goyal was honoured with a Lifetime Achievement Award for services to IACS



Dr. Goyal, Vice-Chancellor of The Maharaja Sayajirao University of Baroda has been Professor of Pharmacology in L. M. College of Pharmacy, Ahmedabad having 31 years of experience in teaching and research in cardiovascular pharmacology & diabetes. In between he was a post-doctoral scholar (1984) and visiting scientist (1995) at University of British Columbia, Vancouver, Canada and visiting Professor, Institute of Cardiovascular Sciences, University of Manitoba, Canada (1999, 2001 and 2003). He has three patents, 15 books, over 250 full papers ('h' index >13), 300 abstracts published and guided 38 Ph.D and 153 M. Pharm students. He is the recipient of 58 awards including Best Pharmacy Teacher and Best Pharmaceutical Research Scientist (APTI) and Distinguished Service Award from International Academy of Cardiovascular Sciences, Canada. He is the Fellow of six professional bodies (FIPS, FIACS, FAMS, FIC, FICN, FNAsc.) and member of different committees (ICMR, AICTE, UGC). He is Past President of Indian Pharmacological Society and Currently President of Society of Pharmacovigilance. He has attended number of Seminars, Workshops and Conferences as resource person and also chaired various sessions. Dr. Goyal has been invited to deliver about 100 lectures in India and 20 lectures abroad.

He is currently the Chairman of Central Regional Committee of AICTE, Bhopal and Member, Executive Committee of AICTE, New Delhi.

During two years as the Vice Chancellor at MSU, besides getting the University re-accreditation he has organized several International and National Conferences, major ones being the International Conference on Buddhism with HH The Dalai Lama present and various top level dignitaries and the Satellite Conference of International Congress of Mathematicians which was held in India for the first time in 113 years. He has been successful in getting sizeable financial support to MSU. After getting over Rs 1.5 Crore in individual capacity at L M College of Pharmacy, he got a grant of Rs 13.5 Crore to MSU at Alma matter – Science Faculty.

Prof. Ernesto Carafoli from Italy received the highest honour of the IACS of the 2009 Medal of Merit for Outstanding Achievements in Cardiovascular Education & Research



Ernesto Carafoli was born in 1932, in Italy. He gained his M.D. in 1957 at the University of Modena, Italy; "Abilitation" (Libera Docenza) in General Pathology (1965) and in Biochemistry (1968); Fogarty International Post-doctoral Fellow in the Dept. of Physiological Chemistry of the Johns Hopkins University, Baltimore, MD, USA (1963-1965); Visiting Lecturer in the same department 1968-1969; Assistant Professor of General Pathology in the University of Modena School of Medicine, Italy (1959-1965); Associate Professor of General Pathology at the same school (1965-1972); Professor of General Pathology, University of Padova School of Medicine (Italy) (1973); Professor of Biochemistry, Swiss Federal Institute of Technology (ETH) (Zurich, Switzerland), (1973 to 1998); Chairman of the Dept. of Biochemistry of the Swiss Federal Institute of Technology (ETH) in 1978 and 1987-1991; Professor of Biochemistry, University of Padova, School of Medicine, Italy (since 1990). From 1971-1991 Visiting Professor for various periods in several Italian Universities, at the University of Nairobi (Kenya), at the Universidad Nacional Autonoma de Mexico, Mexico City (Mexico), at the Universidad Central de Venezuela, Caracas (Venezuela), and at Case Western Reserve University, Cleveland (OH, USA). He was Scientific Director of the Venetian Institute of Molecular Medicine (Padova, Italy), (2000-2005).

He has received numerous awards and honours including Professor Honoris Causa, Institute of Biological Investigations Clemente Estable, Montevideo, Uruguay, 2005; "Grande Ufficiale" of the Order of Merit of the Republic of Italy, 2006; and Marcell Nencki Prize

(Polish Academy of Sciences), 2010. Dr. Carafoli has been a member of a dozen professional Societies, including the Swiss Biochemical Society, the Biochemical Society, the American Society for Cell Biology, the American Society of Biological Chemistry and Molecular Biology (Honorary Member), the Society of General Physiology, the Biophysical Society, the Italian Society of Biochemistry. He has been co-organizer of about 40 International Congresses and Symposia, and of about 25 Advanced Courses, (held in a dozen countries on behalf of FEBS, ICRO/UNESCO, the Gulbenkian Foundation and WHO). He has delivered lectures at about 300 International Congresses, Symposia, Colloquia.

Communications (or posters) at about 200 International Congresses, Symposia, Colloquia and participated in some 500 seminars at universities and other research institutions. He has written over 500 articles in refereed journals on topics of muscle biochemistry, membrane biochemistry, mitochondrial bioenergetics, membrane transport of ions (calcium specially by pumps) regulation of calcium metabolism and over 100 book chapters and 70 invited review articles on the related topics.

Dr. Gary Baxter honoured with the N.S. Dhalla Award for Innovative Investigators in Cardiovascular Sciences



Dr. Baxter is Professor of Pharmacology and Head of the School of Pharmacy at Cardiff University. He qualified originally in pharmacy at the University of Nottingham and The Royal London Hospital. After a period of clinical training in London and Cambridge, he undertook research training in experimental pharmacology in London and Leicester. His Ph.D. was awarded in 1992 for studies on the effects of diltiazem in hypertensive left ventricular hypertrophy. In 2009, the higher doctorate (D.Sc.) was conferred by the University of Nottingham for a body of published works on protective actions of autacoid mediators in myocardial ischaemia-reperfusion.

Dr. Baxter was previously British Heart Foundation intermediate research fellow, at the Hatter Cardiovascular Institute and the Department of Physiology, UCL, mentored by Professor Derek Yellon. After periods spent in the University of South Alabama Medical College, USA, and the Ischaemic Heart Disease Research Unit in Cape Town, South Africa, he was appointed Senior Lecturer in the Department of Medicine at UCL (2000-2002). He was promoted to Reader in Cardiovascular Biology at the Royal Veterinary College, University of London (2003) prior to moving to Cardiff University as Professor of Pharmacology in April 2007.

His research interests and expertise are focussed on myocardial and coronary vascular biology, with a special emphasis on the pathophysiology of acute myocardial infarction. An extensive programme of basic research is investigating the cellular basis of ischaemia-reperfusion injury and the conditioning roles of autacoid and signal transduction mechanisms relevant to clinical cardioprotection. This work has been funded continuously since 1993 by peer-reviewed grant awards from the British Heart Foundation, MRC, Wellcome Trust and Heart Research UK. He serves on numerous editorial boards in the areas of pharmacology and cardiovascular science. Until this year, he served as European Secretary of the International Society for Heart Research.

Dr. Zoltan Papp from Hungary was honoured with the Makato Nagano Award for Distinguished Achievements in Cardiovascular Sciences



Honourable Jay Narayan Vyas presented Award to Dr. Papp

Dr. Zoltán Papp studied at the University Medical School of Debrecen, Hungary (1989-2000) where he is currently the Vice Dean for educational affairs for the Faculty of Medicine (2010). During his PhD and postdoctoral training he worked with Drs E. Carmeliet and K. Sipido in Belgium (1992-1993) and with Dr. G.J.M. Stiene in the Netherlands (1998-1999). His research focuses on the cellular and molecular aspects of cardiovascular pathology, specifically excitation-contraction coupling, ischemia-reperfusion injury, and mechanical and biochemical characterization of the contractile machinery of the human myocardium. He has been a major player in introducing new research fields and facilities in the Division of Clinical Physiology at the Institute of Cardiology. He is a member of numerous Hungarian associations including the Hungarian Society of Cardiology and the Society of Microcirculation and Vascular Biology in addition to international

associations including the International Society of Heart Research and the European Working Group of Cardiac Cellular Electrophysiology. He was recently made the leader of the Experimental Working Group of the Hungarian Society of Cardiology and on the editorial board from Cardiovascular Therapies. He has been invited to give numerous invited lectures around the world and has organized numerous scientific events including a number of Student Scientific Congresses, which emphasizes his commitment and enjoyment in teaching future cardiovascular scientists as reflected by his membership of Students' Scientific Society Council. He has won a number of awards throughout his career including the Best Lecturer of the Faculty of Medicine and the Pro Cura Igenii prize of the University of Debrecen.

Dr. Grant Pierce was honoured with the Norman Alpert Award Distinguished Achievements in Cardiovascular Education



Honourable Jay Narayan Vyas presented Award to Dr. Pierce

Dr. Pierce earned his Hon B.P.H.E., (Lakehead University), M.Sc. (Dalhousie University), Ph.D. in Physiology, (University of Manitoba). After completing postdoctoral training at UCLA (1983-86), Dr. Pierce obtained his first faculty appointment in the Dept. of Physiology, Faculty of Medicine at the University of Manitoba, Winnipeg, Canada. Dr. Pierce has published over 175 research manuscripts and written or edited 7 textbooks on a variety of topics concerning metabolism, nutrition and cardiovascular health. His research papers have been cited well over 4000 times. His work on the diabetic cardiomyopathy and ischemic heart disease has been pioneering and highly cited. Dr. Pierce has served on the Editorial Boards of the top basic science cardiovascular journals in the world including *Circulation Research*, the *American Journal of Physiology* and the *Journal of Molecular and Cellular Cardiology*. He has served as Assistant Editor of *Molecular and Cellular Biochemistry* for more than

20 years. He is currently Co-Editor of the *Canadian Journal of Physiology and Pharmacology*. He has been invited to give over 150 lectures at meetings and Universities throughout the world. In collaboration with the Faculties of Pharmacy, Agricultural and Food Sciences, Human Ecology and Medicine, he has initiated the Canadian Centre for Agri-food Research in Health and Medicine (CCARM) at St. Boniface General Hospital Research Centre to investigate the health-related benefits of nutraceuticals and functional foods. This has now been expanded to a formal agreement with Agriculture and Agri-food Canada to include their researchers in the Centre on a permanent basis. CCARM is now the only research group in the world to investigate the health-related benefits of nutraceuticals and functional foods that operates out of a state-of-the-art medical research facility and a new Clinical Trial Institute and is associated with a teaching hospital. This offers distinct opportunities in advancing our knowledge of the effects of these products in clinical populations. Dr. Pierce is currently the Executive Director of Research at St. Boniface Hospital Research Centre. He has received many awards (including those from the American Heart Association, the International Society for Heart Research, and the Heart and Stroke Foundation of Manitoba, CIHR) in recognition of research excellence. He serves as a member of the Board of Directors of several health-related institutions. He is the past Chair of the Scientific Review Executive Committee for the Heart and Stroke Foundation of Canada. He is a Fellow of the International Academy of Cardiovascular Sciences and has served as Director of Scientific Affairs.



The Howard Morgan Award for Distinguished Achievements in Cardiovascular Research was conferred in absentia on Dr. Subodh Verma, Canada

Being recognized in 2010 as one of Canada's "Top 40 Under 40" in 2010, Dr. Subodh Verma has made a significant impact in cardiovascular health care. He obtained both his MSc and PhD from the University of British Columbia in cardiovascular pharmacology (1991-1997) studying with Dr. John McNeill before

obtaining his MD from the University of Calgary (1997-2000). He completed his fellowship at the University of Toronto where he is currently a cardiac surgeon, associate professor, and Tier 2 Canada Research Chair in Atherosclerosis. He has received research funding for a number of different areas including establishing a traineeship in atherosclerosis program and the PARADIGM study which evaluates the global risk management of primary care and adult risk. His research focuses on cardiovascular disease and he has looked at how the incretin system and C-reactive protein involvement. He is also passionately involved in saving lives by promoting awareness and screening family members of patients as a pre-emptive measure to prevent heart attacks. He is a member of numerous medical and scientific organizations including the American Heart Association, Canadian Cardiovascular Society, and the Royal College of Physicians and Surgeons of Canada and serves as a reviewer of the Lancet, Circulation and Circulation Research. In addition, he has received numerous awards including being the Undergraduate Gold Medalist in Pharmacy at the University of British Columbia, numerous fellowship awards and young investigator awards including the Vulnerable Plaque Association Dr. James T Willerson (2002), American College of Cardiology in Molecular and Cellular Cardiology (2004), and American Heart Association Melvin Marcus Award for Basic Cardiovascular Sciences (2004) young investigator awards. He was recently added to the India Abroad Power List (2009) and won the 2010 American Association for Thoracic Surgery, C. Walton Lillehei Resident Forum (2010) and the University of Toronto's George Armstrong-Peters Prize (2010).



(L-R) Bohuslav Ostadal, Jan Slezak, Keyur Parikh, Naranjan Dhalla and Ramesh Goyal

IACS Lifetime Achievement Award was presented to Dr. Keyur Parikh

Dr. Parikh is Chairman, CIMS Hospital and is one of the senior most interventional cardiologists of India associated with pioneering invasive and interventional cardiology work, doing cardiac interventions since 1985 with triple diplomas of Board of Internal Medicine, Cardiology & Interventional Cardiology (having lived in USA from 1982-1995). Dr. Parikh was awarded the Order of William Harvey by American College of Cardiology in 1991 and the Prestigious Distinguished International Service Award by the American College of Cardiology in 2004. He serves on the Faculty of International Conference - ACC, Euro-PCR, ESC, TCT, CSI, ICI, C3, etc. Recently, he was awarded "DR. K. SHARAN CARDIOLOGY EXCELLENCE AWARD" by IMA.

IACS Distinguished Service Award was conferred on Dr. Milan Chag

Dr. Milan Chag is Managing Director, CIMS Hospital; Adult Congenital and Structural Heart Disease intervention specialist. He was recipient of National Merit and Post-graduate Merit Scholarships. He had extensive training at India's most prestigious institute namely Jaslok Hospital and Research Center, Mumbai, Christian Medical College, Vellore and Sanjay Gandhi Postgraduate Institute, Lucknow. He is the first cardiologist from Gujarat to possess the two highest degrees in cardiology - DM and DNB. He practises as one of the most versatile and one of highest volume interventionalists in India. With 22 years of experience in cardiology, he has been appointed as a post-graduate teacher in Cardiology by National Board of Examination - the highest medical education body in India.



(L-R) Bohuslav Ostadal, Jan Slezak, Milan Chag, Naranjan Dhalla and Ramesh Goyal

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The Journal of the
International Academy of Cardiovascular Sciences

LETTER FROM THE PUBLISHER
Clinical Cardiology: A rebirth

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Dr. Naranjan Dhalla Inaugurated Pharmaceutical Research Centre in Anand, Gujarat

Dr. Naranjan Dhalla, Distinguished Professor of the University of Manitoba at the St. Boniface Research Centre, Winnipeg inaugurated the Pharmaceutical Research Centre, which was established by Shri Ramkrishna Seva Mandal at the Anand Pharmacy College in Anand on February 3, 2011.



This centre will not only be engaged in developing new drugs for the treatment of different diseases but will also train the scientific manpower for the rapidly flourishing pharmaceutical industry in Gujarat. Dr. Dhalla was also the Guest of Honour for the 4th World Congress of the International Academy of Cardiovascular Sciences held in Vadodara and Ahmedabad in the first week of February, 2011 where about 2,500 scientists and health professionals were in attendance. On the sug-

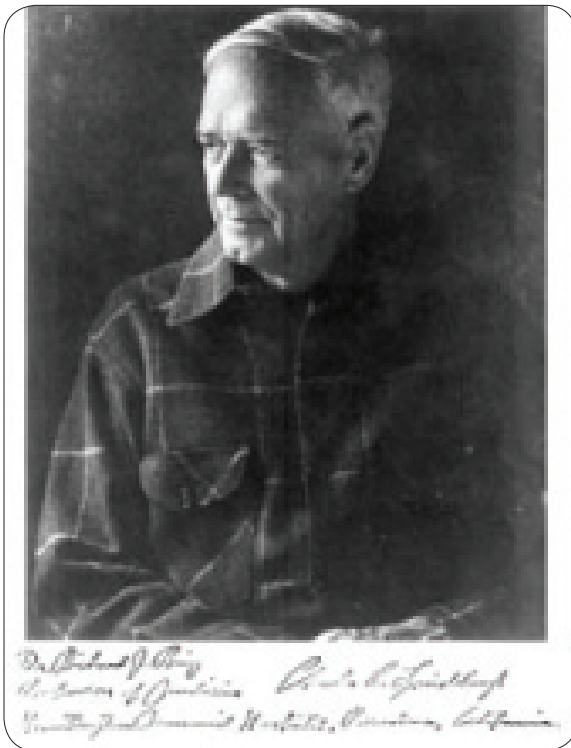
gestion of Dr. Dhalla, the Government of Gujarat has begun making plans for setting up a state-of-the-art Research Institute for the prevention and treatment of cardiovascular diseases (Times of India, February 2, 2011). Since cardiovascular diseases are expected to reach an epidemic level by 2020 and all the existing drugs do not work effectively in reducing mortality due to these diseases, it has become essential to find other innovative ways such as prevention to deal with the problem. Dr. Dhalla believes that promoting cardiovascular education and research as well as training of skilled manpower are the most critical tools for reducing the burden of heart disease in the world.

Dr. Naranjan S. Dhalla obtained B.Sc. degree from Panjab University in 1957, M.S. degree from the University of Pennsylvania in 1963 and Ph.D. degree from the University of Pittsburgh in 1965. He was elected as Fellow of the American College of Cardiology in 1976. He was awarded M.D. (Hon) from Charles University, Prague in 1995 as well as D.Sc. (Hon) from Slovak Academy of Sciences, Bratislava in 1997, Panjab University, Chandigarh in 2009, and Guru Nanak Dev University, Amritsar in 2010. He was awarded Honorary Professorship of the Peking Union Medical College, Beijing (1991) and the Xian Medical University, Xian (1992) as well as Professor Honoris Causa of the Faculty of Medicine, Carol Davila University, Bucharest (1996). Dr. Dhalla served as Assistant Professor at the St. Louis University for 2 years and then moved to the University of Manitoba in Winnipeg where he progressed through academic ranks and has been working in the field of Experimental Cardiology for the past 42 years. Dr. Dhalla served as Head of the Division and then as Founding Director of the Institute of Cardiovascular Sciences at the St. Boniface General Hospital Research Centre during 1987 to 2006. He is currently serving as Director of Cardiovascular Developments and Senior Fellow of Centre for the Advancement of Medicine. His expertise lies in the area of subcellular and molecular basis of heart disease. He has been invited to speak at 288 national and international conferences and has lectured at 204 academic institutions. Dr. Dhalla has published 734 full length papers and 584 abstracts. His research work has been cited more than 10,000 times. He has edited or authored 42 books in the area of heart research and has also trained 158 fellows and students who are carrying out independent research around the globe. Over the past 40 years, Dr. Dhalla has been actively engaged in promoting the scientific basis of cardiology. He has served the International Society for Heart Research as Secretary General for 18 years and also served a 3 year term as President. For the past 24 years, he has been the Editor-in-Chief of an international journal "Molecular and Cellular Biochemistry". In addition to serving on the editorial board of 16 international journals in the past, he is currently serving on the editorial board of 6 journals. Since 1996, he is serving as Executive Director of the International Academy of Cardiovascular Sciences for promoting educational activities all over the world. Dr. Dhalla has received 151 honours and awards from many countries including the Order of Canada, Order of Manitoba, Order of the Buffalo Hunt from the Province of Manitoba, Fellowship in the Royal Society of Canada, Medal of Honour of the Canadian Medical Association, and Research Achievement Award of the Canadian Cardiovascular Society. The Naranjan S. Dhalla Chair in Cardiovascular Research was established by the St. Boniface Hospital Research Foundation. Dr. Dhalla was granted Coat of Arms by the Canadian Heraldic Authority and chosen as the second greatest Manitoban of all times by the Winnipeg Free Press. His "bust" has been installed in the Citizens Hall of Fame, Winnipeg. Both the Panjab Foundation of Manitoba, and India Canada Culture and Heritage Association (ICCHA) were founded by Dr. Dhalla in collaboration with other members of the Indian community.



The Lone Eagle's Contribution to Cardiology

online at www.charleslindebergh.com/heart written by the late Richard J. Bing, M.D.



Charles Lindbergh (1902–1974) at the age of 70. The inscription reads as follows: Dr. Richard J. Bing Professor of Medicine Huntington Memorial Hospital, Pasadena, California Charles A. Lindbergh (Photograph from the personal file of the author.)

Famous solo flight to Paris

Practically everyone knows that Charles Lindbergh made the famous solo flight to Paris in 1929; he was born in Detroit on February 4, 1902, spent some of his youth in Little Falls, Minnesota, and was involved in the unsuccessful campaign for U.S. Senate by his father. Many are also aware of his barnstorming days, his self-imposed exile, his controversial participation in political movements, and finally his interest in environmental causes. Many also remember that he married Ann Morrow, the daughter of the American ambassador to Mexico and partner of J.P. Morgan. He died in Hawaii in 1974. For his aviation exploits, Charles Lindbergh was called the "Lone Eagle." His life, however, was not one of continuing triumphs. It was darkened by the horrible experience of the kidnapping and murder of his infant son.

Involved in medical research

These facts are known to the general public. Few people, however, know that Lindbergh was also involved in medical research. This is why I met him and worked with him at the Rockefeller Institute in New York in 1936. I was a young physician, 27 years old, working at Carlsberg Biological Institute in Copenhagen, Denmark, to learn cell culture methods. There, I met both Lindbergh and Alexis Carrel, the surgeon. Both attended an international meeting of biology to demonstrate their new perfusion system. In setting up this apparatus, they needed someone who spoke both Danish and English, and luckily I was assigned the job. Carrel and Lindbergh planned to establish their perfusion system in Denmark, and I was chosen to learn their method in New York and return to Copenhagen where the perfusion system was to be installed. After several attempts, Carrel was able to obtain a Rockefeller stipend for me, and after some painful interviews with the Rockefeller people in Paris (the personnel at the Paris Headquarters of the Foundation had no concept of the Nazi menace), I traveled to New York, stopping in England to visit the Lindberghs in Seven Oaks, Kent.

Working at the Rockefeller Institute

In America, working at the Rockefeller Institute (now Rockefeller University) in New York City, I had frequent contact with Charles Lindbergh. For him these frequent visits to Carrel's department at the Rockefeller Institute constituted an escape from the memory of the kidnapping and murder of his son.

What brought Charles Lindbergh into biological research? The motivation was personal. Lindbergh's sister-in-law had rheumatic fever as a child and developed mitral stenosis. It was a protracted illness accompanied by hemoptysis, pulmonary edema, shortness of breath, fatigue. Apparently she was a vibrant, vital person, enjoying life, and fighting the illness that finally killed her.

Few of us today realize the tremendous advances that medicine has made in the last 50 years. In the field of cardiology, cardiopulmonary bypass has made possible surgery on the open, virtually bloodless heart. But at the time of Lindbergh's sister-in-law's illness, only inadequate medical therapy was available.

Lindbergh, who had an inquisitive mind, trying to apply mechanical solutions to technical problems, asked the question why surgery on the bloodless heart might not be possible. This idea was 20 years ahead of its time. He posed the question to his wife's anesthesiologist, who then directed him to Alexis Carrel, the Director of the Department of Experimental Surgery at the Rockefeller Institute in New York.

Carrel was known for his surgical technique. He was a Nobel Prize winner for his work on transplantation of organs, made possible by his technique of blood vessel suture. At the same time, Carrel was a seasoned research worker, who was not apt to indulge in fly-by-night projects. When Lindbergh approached him



Charles Lindbergh & Alexis Carrel on the cover of TIME.

with his idea of operating on the bloodless heart to rescue his sister-in-law from certain death, Carrel was not overly enthusiastic, knowing that these techniques were still in the future. Instead, he suggested that Lindbergh participate with him in a study that was more to Carrel's taste, the culture of whole organs, a system to maintain an organ outside the body by circulating nutrient fluid through its artery; this would enable Carrel and Lindbergh to study the interplay between the circulating fluid and the perfused organ, using the latter as an indicator. Lindbergh's perfusion system was, in principle, a sterile glass container consisting of three chambers: organ, equalization, and pressure chambers. A flask filled with mineral oil under pulsatile pressure acted like the piston of a pump. Lindbergh's contribution was a perfusion system, which combined sterility with perfusion of a small organ at variable systolic and diastolic pressures and heart rate (frequency). Sterility was of major importance, since both Carrel and Lindbergh wanted to perfuse organs for several weeks, making possible the study of different perfusion fluids on the organ. Lindbergh accomplished this by his system of floating valves, making the whole apparatus a closed system by sealing it appropriately with airplane glue. The disadvantage in this system was the disproportionate volume of the perfusion fluid to the weight of the organ, frequently the cat's thyroid gland, and the lack of respiratory pigment, which would have carried oxygen to the perfused organ and made possible the use of larger organs. I tried to accomplish these goals later when I worked in the Department of Surgery at Columbia University, New York. Since hemoglobin in these perfusion systems is rapidly oxidized to nonoxygen-carrying pigments, I tried the respiratory pigment of the horseshoe crab, hemocyanin: when oxidized, it is a beautiful marine blue, and when reduced a pale white.

Advanced the future of cardiac surgery

If Carrel had followed Lindbergh's suggestion to develop bypassing the heart during cardiac surgery, he could have advanced the future of cardiac surgery by many years. More than 20 years later, in 1954, thanks to the imagination and tenacity of another surgeon, Charles Gibbon, open heart surgery became a reality.⁴

Carrel's interest in the culture of whole organs was a natural extension of his work on cell cultures. The perfusion of whole organs was in line with Carrel's conceptual research. He saw it as a method of studying the interplay between the internal environment (the perfusion fluid) and the single organ, using the latter as an indicator.

Because Carrel left the Institute soon afterward to begin his ill-fated and ill-advised journey to France during the Nazi occupation, neither he nor Lindbergh ever saw the fulfillment of the potentials of this technique. The method may become of considerable value in the study of the cultivation of viruses.

The last time I saw Lindbergh

The last time I saw Lindbergh was when he visited me at the Huntington Memorial Hospital and Huntington Medical Research Institutes in Pasadena in 1970. He stayed at my house in La Canada. I am reprinting a letter he wrote me in 1970 after this visit, that shows how nostalgic he was at the memory of our joint stay at the Rockefeller Institute. It also shows that his excursion into the field of biomedical (cardiac) research was an experience he treasured all his life as a quiet period in a turbulent and disturbing past.

This is his letter:

Switzerland
Dec. 12, 1970

Dear Richard:

I thoroughly enjoyed my visit with you at Pasadena – seeing your research projects, inspecting the hospital, meeting your associates, the pleasant hour at your home, etc. You were most considerate to drive me back to the airport that night.

How time collapses under the circumstances of our visit – the thirty years between Carrel's laboratory and your own. There are moments when it seems to me that the time-gap disappears, and that you, Carrel, and I are still together – without the separation that we think so obvious in death. Maybe if man had deeper awareness, life and death would make less difference. I am inclined to think so.

Again, thanks for your hospitality and friendship. I hope your experimental projects meet with the utmost success.

*Best wishes to you always,
Charles A. Lindbergh*

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PostDoctoral Joint Meeting on Cardiovascular Sciences



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Prof. Dr. Otoni M. Gomes



N P G

Coração em todos os sentidos
FCSFA

M D I²

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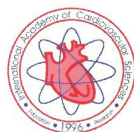


Ottawa - CANADA

**August 11th
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POSTDOCTORAL JOINT SYMPOSIUM ON CARDIOVASCULAR DISEASES

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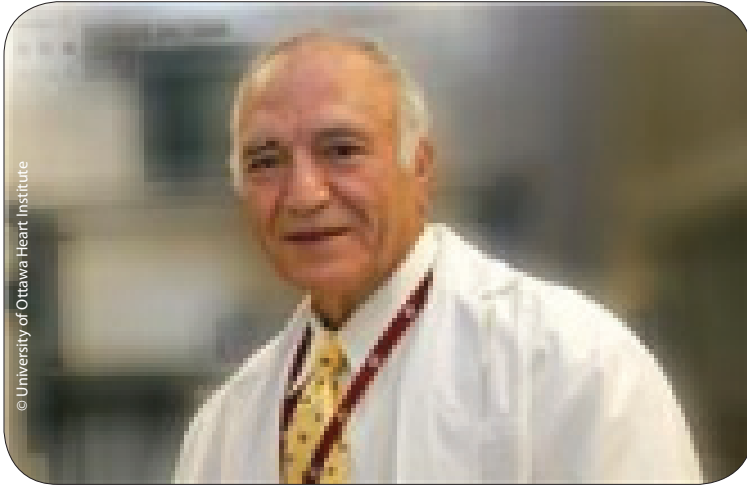
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Scientific Co-Sponsorship:



From goat herder to scientific pioneer A prestigious award is the latest chapter in a remarkable life

by Ian Macleod, *The Ottawa Citizen*, November 16, 2010



The first thing to know about Tofy Mussivand is, he cherishes simplicity. At 67, he enjoys putting around his prized tomatoes while hatching ground-breaking ideas to help fight cardiac disease, including an experimental T-shirt to assist or even heal failing hearts. Second, he is stubborn. He may fail, but he never quits. That love of simplicity and his drive and determination have guided him to dizzying heights. Dr. Mussivand is Chair and Director of the Cardiovascular Devices Program at the University of Ottawa Heart Institute, Professor of Surgery and Engineering at the University of Ottawa and Carleton University, a Fellow of the Royal Society of Canada and longtime member of the Prime Minister's Advisory Council on Science and Technology. He holds 15 patents, with several others pending, and has authored more than 250 papers, books and technical articles. Some of his inventions under development at the institute's Medical Device Research and Training Laboratory

even fall outside health care. One is a tiny gizmo that extracts and analyzes DNA from a single skin cell. The prototype does the job in under five minutes, but Mussivand is aiming for 15 seconds before commercializing. Police and security outfits are drooling over the crime-scene identification and biometric security possibilities.

Mussivand's most exceptional feat, however, is his own life. He grew up in poverty, tending his family's sheep and goat herd as a teenager in the highlands of Iranian Kurdistan and slopes of Turkey's Mount Ararat. He learned to read and write by the light of a kerosene lamp. "At night we used to go on the roof of the houses in the summer and stare at the stars. I ask, 'Why is that, why am I here, what's my purpose?'" "I was bothering my father with these questions, but he didn't know. Eventually, he got tired of me asking ... he put me in a school. "I remember the first pencil I got. And I remember the first page of paper I got to write on. It was exciting for me." He grew up a curious, impatient workaholic, self-admitted egoist and a lifelong existentialist.

Tonight, he will be honoured with a major national "Knowledge Translation" award from the Canadian Institutes of Health Research for his innovations, the latest in a stellar collection of professional honours and accomplishments. The award is accompanied by a \$100,000 prize. "Only in Canada some shepherd boy like me could come and get this opportunity," he said from a boardroom near his fifth-floor Heart Institute office, where he routinely starts his days around 5 a.m., finishing around 11 p.m. All for no salary. "I never give up," he says. "The tougher it becomes, the more exciting it becomes to me." His journey to the forefront of global medical technology is inspiring, if not incredible. Speaking two words of English -- "yes" and "no" -- he emigrated to Edmonton in 1965 at 22 and worked as a dishwasher while studying graduate-level hydrology on a full scholarship at the University of Alberta. Seven years later, he was an engineer and senior executive for an Alberta utility company and self-made millionaire in real estate. He lost his estimated \$35-million fortune when interest rates hit the stratosphere in the early 1980s and followed his young Canadian wife, Dixie Lee, into medicine. He later landed at the prestigious Cleveland Clinic Hospital and Research Foundation in Ohio. There, he merged his engineering and medical backgrounds and began investigating a revolutionary new concept for an artificial heart, one fully implantable in the thoracic cavity, remotely powered, remotely monitored, with no wires or tubes. In 1989, Dr. Mussivand was lured back to Canada by heart institute founder Dr. Wilbert Keon, where his HeartSaver invention spawned the World Heart Corp., in which Mussivand held senior positions. Technical setbacks and a lack of Canadian investors forced the company to flee to the United States in 2004. While HeartSaver was a landmark device, it was overtaken by more advanced models and never hit the market.

Heart disease is associated with more than 18 million worldwide, with annual costs of \$500 billion in the U.S.A. Most treatments are expensive, invasive and/or have major side effects and limited efficacy. Mussivand and his engineers, doctors and other PhDs are developing about a dozen prototype medical devices and concepts. Most are heart-related, but some have implications and applications for genetics, neurobiology, surgical safety, blood testing and reducing hospital infections. Mussivand is pinning big hopes on his "wearable thermal therapy device." The idea hit him about eight years ago while bathing in a hot spring in Japan, where he spends time teaching each year. "When you come out you are really relaxed. I asked myself, 'How come I'm so relaxed?' There is a chemical in the body called nitric oxide, a vassal dilator, it opens the vessels, so the more blood goes to my brain cells, I'm happier." An associated phenomenon is called heat shock protein, which can prevent some types

of cell death. Mussivand and his team theorize that their \$500 to \$1,000 wearable thermal device, say T-shirt or vest, would transfer heat and raise the core body temperature by one to three degrees triggering the body's natural healing pathways and potentially reversing some of the physiological issues associated with heart failure. Other devices under development:

- A portable device that analyses a person's breath to quickly and accurately detect heart failure in hospital emergency rooms.

- A device that can assist in more accurate placement of stents in coronary arteries and with less patient risk.

- An implantable device that monitors a heart patient's blood flow once they leave hospital. The device would remotely monitor the patient's heart and alert them, possibly via their cellphones, to seek treatment. If the messages went unheeded, their doctors would be alerted.

- Devices to transmit energy through the skin, without wires, to power implantable medical devices and as a non-invasive method to fight in-hospital infections caused by stents, pacemakers, other implantable devices and sutures.

The World Heart disappointment and other experiences have led Mussivand to champion the development of a medical devices industry in Canada. "We are a small population country. Most good things that happen in Canada. Technologies eventually end up somewhere else," he says. "I'm not against that, but I'm saddened because some of these things could bring jobs and revenue to Canada." Having served as an adviser to Prime Ministers Harper, Martin and Chrétien, "I believe we could bring more revenue to Canada from the medical device industry than all the tar sands, all the automobile, all the fishery exports. There are huge opportunities. All the advanced countries have made medical devices a priority, except Canada."

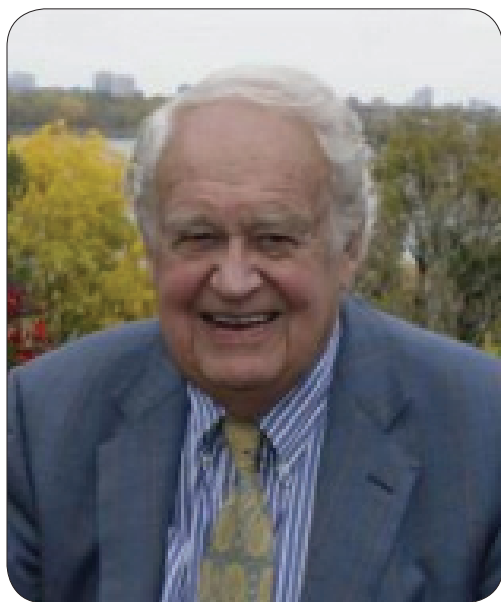
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REMEMBERING SOMEONE SPECIAL

CEO/Philanthropist Helped Humanity

The former Medtronic executive helped to change the way heart disease is treated.

from Medtronic web site



Former Medtronic chairman and chief executive officer Winston Wallin died recently at the age of 84.

"We are saddened to learn of Win's passing and our thoughts and prayers are with the Wallin family as they grieve the loss and celebrate the life of a dedicated family man and community leader," said Medtronic chairman and CEO William A. Hawkins, III. "Win's legacy is part of the very heart of Medtronic. Without his contributions, Medtronic would not be what it is today. We are grateful for the opportunity to remember his leadership at Medtronic with pride, and we are inspired to carry out our Mission with the same devotion and passion that he did. We fondly remember Win for much more than his business record. He was extraordinarily generous and kind, and had a sincerity and dedication to fairness and ethical business practices which we strive to uphold every day at Medtronic."

Mr. Wallin joined the Medtronic Board of Directors in 1978. Seven years later, he left his role as President and Chief Operating Officer of Pillsbury to lead Medtronic through an acutely vulnerable time for the company. His decision to move to a much smaller organization in the medical technology industry, though he had no technical background, was rooted in the Medtronic Mission. Mr. Wallin passionately believed in Medtronic's research and product development capabilities. He found it personally rewarding to know that his work could help improve the health of millions of people around the world, both in his time and far into the future.

Under his leadership, Medtronic experienced remarkable growth, acquiring nearly a dozen medical technology companies and dramatically diversifying the company. During that time Medtronic entered new markets that have played important roles in its expansion, including tissue heart valves, cardiopulmonary equipment, coronary angioplasty catheters and centrifugal blood pumps. Research spending doubled and with the internal development of ICDs and the SynchroMed drug pump, expanded into new areas. By the end of Mr. Wallin's tenure as CEO in 1991, Medtronic had significantly increased in value and its profile had been raised worldwide.

After his retirement, Mr. Wallin dedicated his time and resources to multiple philanthropic organizations and founded Wallin Education Partners, an integral partner to the Medtronic Foundation's Scholars program. Since 1991, the program has awarded more than 3,000 scholarships and more than \$25 million to support high-potential students with financial need from Minneapolis, Anoka-Hennepin, St. Paul and North Metro district high schools. Medtronic also celebrates Mr. Wallin's legacy of leadership each year through the Wallin Leadership Awards. The program was established in 1987 to honor Medtronic leaders who share Mr. Wallin's commitment to nurturing talent and achieving superior business results.



There is an awesome conversation which we'd like to suggest readers look at:

Eugene Braunwald in conversation with Thomas Lüscher The Rise of Cardiovascular Medicine (Feb 2011)

http://www.oxfordjournals.org/our_journals/eurheartj/cvmedicine.html

Both are FELLOWS of IACS

Sea buckthorn, a promising plant for reducing cardiovascular disease risk

by Yan Jun Xu and Pram Tappia, Winnipeg, Canada



Dr. Yan Jun Xu (L), a research scientist, recently joined Dr. Todd Duhamel's group at the St. Boniface Hospital Research Centre in Winnipeg. He is developing a sweet species of the sea buckthorn plant (L) on his hobby farm near Lockport, Manitoba.

Sea buckthorn (*Hippophae rhamnoides*) is a hardy plant that needs a little care and can survive in extreme cold. It has been widely grown in China, India and Russia. The beneficial effects of sea buckthorn are rapidly emerging in North America as a promising plant for reducing cardiovascular disease risk. Sea buckthorn is natural source of vitamins and anti-oxidants. The vitamin C amount in the sea buckthorn berry is about 40 times high than in oranges. It also contains a high amount of carotenoids, trace elements, essential amino acids, flavonoids and omega-3 fatty acids. This plant has been used in folk medicine for ulcer, burns and digestive problems. New lines of evidence suggest that this plant may reduce blood cholesterol and glucose levels. It exhibits anti-oxidant properties, can inhibit platelet

aggregation and may be cardioprotective against ischemia-reperfusion-induced damage. A recent review article published by Xu et al in Dr. Dhalla's group suggests that daily consumption of 28 g of berry or 5 g of oil daily may be potentially beneficial in the prevention of cardiovascular diseases including atherosclerosis, hypertension and heart attack. However, since most of these studies were carried out in animals, the authors point out that large and blind clinical trials are needed to verify the results of the preclinical studies as well as for testing the efficiency and safety of sea buckthorn for use in humans. The sea buckthorn products include tea from leaves, juice from berry and oil from seeds. Sea buckthorn wine and vinegar are also available in the Asian market. The juice is very acidic and unpleasant, and consumer use is low. Accordingly, a sweet and better tasting species of sea buckthorn plant is currently being developed on Dr. Xu's sea buckthorn farm. Daily consumption of sea buckthorn products may be helpful for reducing the risk factors of cardiovascular diseases.

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Steve and Kim Schaffer with Irene Furgale (R) on their beloved beach in Alabama

Unique “Team Visits” Launched in Thailand

by Ivan Berkowitz, Winnipeg, Canada

Thanks to the diligent efforts of Kim and Steve Schaffer, we were able to encourage the participation of Dr. Sanya Roysommuti, Khon Kaen University in Khon Kaen, Thailand, to serve as our local host. In Ahmedabad, Dr. Parikh introduced me to a number of doctors who were most intrigued with Dr. Grant Pierce’s visionary article in CV Network 10/1 describing “A New Strategic Direction for the Academy”. We incorporated this direction into plans for a series of four Seminars in Thailand April 22 to May 10.

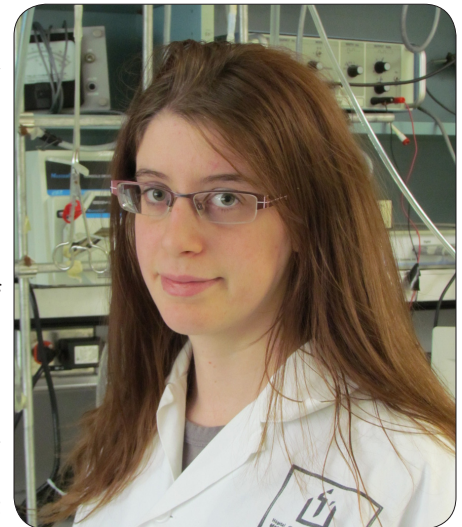
Healthy Outlook on Exercise

by Alison L. Müller, Winnipeg, Canada

With so much excess in many aspects of modern society, there is a growing idea that enjoying things both responsibly and in moderation lead to a well-balanced lifestyle. Practices of drinking responsibly, enjoying treats occasionally, and being environmentally friendly to promote an over-all healthy environment are common motifs throughout society in order to encourage one to live a healthy and enjoyable life. Exercise is an essential aspect in promoting this healthy lifestyle and should be practiced in moderation as well. In patients either with or without cardiovascular disease, exercise has shown positive effects including increasing the pumping ability of the heart and promoting overall body health.

In addition, when individuals exercise intensively it releases endorphins and enkephalins creating a sense of “euphoria”, also known as “runner’s high” which not only promote feelings of bliss but can also numb sensations of pain. This can be potentially dangerous as the body’s ability to sense a potential injury is impaired which may result in a significantly damaging event. Both endorphins and enkephalins are also responsible for promoting addictive behavior as a result of “good” feelings being felt by those who exercise intensely, and there have been a few studies evaluating whether a positive or negative addiction occurs with exercise, especially running. The benefits of exercising were compared to patients who felt symptoms of withdrawal (for example, depression, anxiety, guilt, and/or irritability experienced if one does not exercise 24-36 hours after a previous workout) and disregard for physical injury, social/family interaction, and work responsibilities. A regular trend was the more often and intensely an individual exercised, the more exercise became a primary focus in their life and possible withdrawal symptoms became more prominent. The consensus is that exercising regularly yields substantial health benefits, regardless of whether it is a moderate or strenuous workout, but should be done in moderation so that it does not dominate other aspects of daily life or cause additional damage to injuries sustained either by a previous workout (such as a sprained ankle) or other physical activity. Exercise must be undertaken cautiously and, although an individual should strive to increase endurance, strength, and flexibility, these goals should be realistic and obtained in a moderated healthy and safe manner.

In both elite and amateur marathon runners, cardiac damage biomarkers are increased upon ending the marathon, and remain elevated for various periods of time before returning to normal. It is currently unknown why these biomarkers are released during strenuous and/or prolonged intense exercise however, it would be naïve to suggest that they have no effect on cardiac function or remodeling as the heart must compensate for the increased stress that it is experiencing in order to supply the body with blood. There is also echocardiographic evidence of heart dysfunction which returns to normal approximately a week later, although there are increased incidences of atrial fibrillation in athletes when compared to non-athletes. It has been shown that the acute stress endured by the heart causes it to become stronger and these changes may result in adaptation to the cardiac stress caused by exercise. There are even those who would go so far as to state that exercise can kill, with sudden cardiac death occurring more frequently in athletes (2.3 deaths per 100 000 annually) than in non-athletes (0.9 per 100 000 annually); however, there is a greater overall number of non-athletes who suffer sudden cardiac death than non-athletes which may have been prevented if they exercised regularly. This appears to happen most often during or immediately post physical exertion indicating a correlation between changes undergone by the athletic heart, altered homeostasis caused by physical exertion, and sudden cardiovascular dysfunction. However, it should be kept in mind that the risk for sudden death in athletes where individuals exercise regularly is significantly decreased. One of the most common causes of sudden cardiac death in athletes may be a result of hypertrophic cardiomyopathy, where an enlarged



heart has its muscle cells exhibiting an altered, irregular orientation. Increased levels of catecholamines, including adrenalin, have also been shown to cause coronary spasms, and one of the possibilities for sudden cardiac death in athletes with enlarged hearts is a combination of all these factors contributing to an increased risk of coronary spasms and cardiac arrhythmia. These catecholamines are also increasingly oxidized in the circulation during strenuous exercise which may damage other tissues. Although it is uncommon to have such significantly detrimental cardiovascular events occur among athletes, it is important to ensure that an adequate amount of training has been done prior to undertaking extremely strenuous tasks, such as marathon running, and in cases where one is at risk, monitoring the heart when performing strenuous exercise is an important precaution so that an individual does not significantly overstep their recommended peak heart rate. Thus it is important to be aware of the changes going on in the heart during intense exercise. What is evident from the studies where death has occurred in athletes as a result of cardiac events is that there is a lack of cautiousness and/or awareness when undergoing extreme exercise. In older athletes, sudden death generally occurs due to atherosclerotic lesion rupture or ventricular fibrillation whereas younger athletes are victims of cardiac hypertrophy and congenital cardiovascular disease.

Perhaps one of the most well-known of these cases of sudden cardiac death is that of James Fixx, who was a famous fitness guru in the 1970's and had popularized the sport of running with his best-selling book, *The Complete Book of Running*. Prior to running he smoked two packs of cigarettes per day and weighed over 200 pounds; however, at age 35 he decided to quit smoking and take up marathon-running. He promoted on numerous talk shows and his books how running improved his life. Unfortunately, he had a fatal heart attack at 52 during a routine daily run despite his apparently incredible fitness level. Later, there was a suggestion that he had visited his friend Dr. Kenneth Cooper, founder of the famed Cooper Clinic. Dr. Cooper pleaded with Jim to go through the Clinic's testing program – he refused which seems to indicate he knew that he had heart disease.

The lesson to be learned is that it is as important to monitor one's health and be thoroughly examined for any potential cardiovascular defects. This should not prevent those with cardiovascular disease from exercising as it has been demonstrated in clinical trials where the benefits gains from both moderate and high intensity physical activity greatly outweigh the risks in patients, which include reducing the risk of myocardial infarction, preventing development and progression of atherosclerosis, and improving overall health and quality of life. One should be acutely aware of risk factors where the heart may be compromised such as those with hypertension, high cholesterol, diabetes in addition to obese individuals, smokers and ex-smokers and take precaution when exercising to insure that they are not harming, only helping, their health. It is rare to find a physician who would not recommend exercise to their patients as it improves overall health and prevents cardiovascular disease.

In summary, there are multiple beneficial effects of exercise include muscle toning, maintaining joint function, increasing lung capacity, and improving overall body health as well as reducing the risk of cardiovascular disease and improving the health of those with cardiovascular disease. A moderate level of exercise is always a good idea in maintaining a healthy body and increasing longevity, independent of cardiovascular risk factors, as long as it is done responsibly and with foreknowledge of one's own cardiovascular risks.

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