The Institute of Cardiovascular Science and Medicine

2013 Annual Report
Mission Statement of the Institute of Cardiovascular Science and Medicine

The Institute of Cardiovascular Science and Medicine (ICSM) commits itself to strive for excellence in research, teaching and training in cardiovascular sciences which contributes to the prevention and patient management of cardiovascular diseases in Hong Kong.

We shall offer the highest standards of teaching research and scholarship in an interactive environment conducive to creativity, to innovative learning and to freedom of thought, enquiry and expression in all aspects of cardiovascular sciences.

We shall continue to undertake research, teaching and other forms of service in clinical and basic cardiovascular sciences which will advance our quest for wisdom, truth and excellence in biomedical science at large.

We shall make known the mission of this Institute in Hong Kong and internationally.
Governance

Council

The members of the Institute elect a Council, who are responsible for carrying out the work of the Institute according to its Mission, Objectives, By-Laws and Regulations. The Council consists of the Officers, the immediate Former Director (if available), and three to ten Council Members. The Officers of the Institute are the Director, Deputy Director, Honorary Secretary and Honorary Treasurer. Each Council serves the Institute for a period of two years. The Seventh Council of the Institute was elected at the 17th Annual General Meeting on 23rd November 2013, and remained in office throughout 2015.

Ninth Council of the ICSM

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<th>Role</th>
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<tr>
<td>Director</td>
<td>Professor B.M.Y. Cheung</td>
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<td>Deputy Director</td>
<td>Dr. H.J. Ballard</td>
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<td>Honorary Secretary</td>
<td>Dr. G.P.H. Leung</td>
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<td>Honorary Treasurer</td>
<td>Dr. M.L. Fung</td>
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<td>Council Members</td>
<td>Professor K.R. Boheler</td>
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<td></td>
<td>Dr M.P.H. Chan</td>
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<td></td>
<td>Professor Y. Huang</td>
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<td>Dr M.C.W. Kong</td>
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<td>Dr S.W.S. Leung</td>
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<td></td>
<td>Professor R.A. Li</td>
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<td>Professor R.Y.K. Man</td>
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<td>Dr. E.H.C. Tang</td>
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<td>Professor P.M. Vanhoutte</td>
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<td>Dr Q. Yang</td>
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<td>Dr K.K.H. Yiu</td>
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Membership

At the end of the year 2013, membership stood at 128, and consisted of 12 Founding Members, 45 Full Members, 6 Associate members and 65 Affiliate Members.

Criteria for membership

Clinicians, scientists, researchers and students with an interest in the cardiovascular field are invited to become members of the Institute. The classes of membership open to applicants are Full, Associate or Affiliate Membership.

All applicants for admission shall

1. Be at least 18 years of age; and
2. Be of good character and repute; and
3. Undertake in writing to adhere to the By-Laws of the Institute, as amended from time to time.

Applicants for admission as a Full Member shall also

1. Be a full time or honorary teacher (Assistant Professor, Honorary Clinical Lecturer or above) of the University of Hong Kong or be deemed to be holding an equivalent position; and
2. Be engaged in research in cardiovascular science or cardiovascular medicine, as evidenced by his or her published works.

Applicants for admission as Associates shall also

1. Possess either a medical degree (MBBS or equivalent) plus a higher qualification (MRCP or equivalent), or a doctorate (PhD or equivalent) in science; and
2. Be engaged in research in cardiovascular science or cardiovascular medicine.

Applicants for admission as Affiliates shall also

1. Possess a University degree or equivalent in medicine, nursing or science; and
2. Be engaged in or have a strong interest in cardiovascular research.

Applications for membership, accompanied by the appropriate supporting documents (e.g. resume, list of relevant publications, copies of certificates) should be submitted to the Honorary Secretary, to whom membership enquiries may also be addressed. The application form may be obtained by writing or e-mailing (icsm@hkucc.hku.hk) to the Honorary Secretary, or it may be downloaded from the membership section of our website (http://www.icsm-hk.org)

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**Research**

**Scientific Meetings**

**The Seventeenth Annual Scientific Meeting: Translating Advances in Science into Improvements in Cardiovascular Health**

The Seventeenth Annual Scientific Meeting was held on November 23, 2013 at the Hong Kong Convention & Exhibition Centre, under the Co-chairmanship of Professor Bernard Cheung, Professor C.M. Yu, Dr. David C.W. Siu, Dr. K.H. Yiu, Dr. Eva H.C. Tang, Dr. Heather Ballard and Dr. George P.H. Leung.

The meeting started in the morning with oral and poster presentations by the young investigators: 27 abstracts were submitted for the meeting, and prizes were awarded to the best oral communications and the best poster presentations. The Young Investigator Awards were sponsored by the Sun Chieh Yeh Heart Foundation. In addition to the presentation by the young investigators, an invited lecture entitled “22.q11.21 Deletion Associated with Sporadic Tetralogy of Fallot in Han Chinese” was given by Prof G.W. He from Nankai University (China).

The scientific programme in the afternoon comprised two Symposia: The first symposium was named as ‘new Approaches in Treating Cardiovascular Disease’, which included the topics of ‘Personalised Medicine for Cardiovascular Diseases’, ‘Advances in Hypertension management and New Guideline Update’ and ‘Recent Advances in the Management of Heart Failure’. The lectures were given by Professor H.F. Tse from University of Hong Kong, Dr N.Y. Chan from Princess Margaret Hospital of Hong Kong and Professor C.M. Yu from Chinese University of Hong Kong. The Second symposium was named as ‘New Mechanisms and Potential Targets in Cardiovascular Diseases’ which included the lectures on ‘Bidirectional Nature of Cardiovascular and Kidney Disease’, ‘TRPC3 in Coronary Endothelial Function: Role of Hypoxia-Reoxygenation and Hyperkalemia’, Human Cardiac Tissue Fabricated from Human Embryonic Stem Cells (hESCs): Present Status and Potential Applications’ and ‘A-FABP is a Potential Mediator of Diabetic Cardiomyopathy and Ischemic Reperfusion Induced Cardiac Injury’ delivered by Dr Koichi Shimizu from Nangai Clinic and Saitama Medical School (Japan), Dr S.Q. Yang from Chinese University of Hong Kong, Dr C.W. Kong from the University of Hong Kong and Dr Ruby Hoo from the University of Hong Kong.

The meeting closed with a brief address from ICSM Director, Professor Bernard Cheung, and presentation ceremony for the Young Investigator Awards.

**Seminars**

To encourage the interactions among younger researchers, A seminar was held on 9th April 2013. The topics were ‘In vitro electrophysiological drug testing using mouse cardiomyocytes’ and ‘Transient receptor potential channel M2 contributes to neointimal hyperplasia in vascular walls’, which were presented by Max Chen, PhD student in the Department of Medicine, HKU and Xiaochen Ru, PhD Student in the School of Biomedical Sciences, CUHK, respectively.
## External Research Grants awarded in 2013 to members of the ICSM

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<th>Awarding Body</th>
<th>Project Title</th>
<th>Awards (HK$)</th>
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<tr>
<td>Professor R.A. Li (PI)</td>
<td>RGC GRF</td>
<td>Engineering Calcium Homeostasis of hESC-derived cardiomyocytes</td>
<td>1,212,445</td>
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<tr>
<td>Prof H.F. Tse (PI)</td>
<td>RGC GRF</td>
<td>Effects of Catheter-based Splanchnic Denervation on Blood Pressure Control and Left Ventricular Remodeling in Porcine Model of Hypertensive Cardiomyopathy</td>
<td>1,039,239</td>
</tr>
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<td>Professor X.Q. Yao (PI)</td>
<td>RGC GRF</td>
<td>Role of transient receptor potential channel isoform M2 in the pathological progression of arteriosclerosis</td>
<td>952,636</td>
</tr>
<tr>
<td>Dr. K.H. Yiu (PI)</td>
<td>RGC GRF</td>
<td>Relationship between matrix G1a protein and osteogenic endothelial progenitor cells with vascular and valvular calcification in patients with rheumatoid arthritis: Potential therapeutic role of vitamin K</td>
<td>649,524</td>
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### ICSM publications in 2013

Abstracts from the Seventh Annual Scientific Meeting (held in November 2013) were published in October 2013 issue of the Journal of the Hong Kong College of Cardiology (Volume 21, No. 2 pp.57-75)

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<td>GW He, CL Maslen, XY Bai, XC Liu, ZG Liu, Q Yang</td>
<td>22q11.21 DELETION ASSOCIATED WITH SPORADIC TETRALOGY OF FALLOT IN HAN CHINESE</td>
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<td>NY Chan</td>
<td>ADVANCES IN HYPERTENSION MANAGEMENT AND NEW GUIDELINES UPDATE</td>
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<td>CM Yu</td>
<td>RECENT ADVANCES IN THE MANAGEMENT OF HEART FAILURE</td>
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<td>K Shimizu</td>
<td>BIDIRECTIONAL NATURE OF CARDIOVASCULAR AND KIDNEY DISEASE</td>
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<td>Q Yang, JH Huang, XQ Yao, CM Yu</td>
<td>TRPC3 IN CORONARY ENDOTHELIAL FUNCTION: ROLE OF HYPOXIA-REOXYGENATION AND HYPERKALEMIA</td>
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<td>CW Kong</td>
<td>HUMAN CARDIAC TISSUE FABRICATED FROM HUMAN EMBRYONIC STEM CELLS (hESCs): PRESENT STATUS AND POTENTIAL APPLICATIONS</td>
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<td>RLC Hoo</td>
<td>A-FABP IS A POTENTIAL MEDIATOR OF DIABETIC CARDIOMYOPATHY AND ISCHEMIC REPERFUSION INDUCED CARDIAC INJURY</td>
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<td>X Ru, Y Huang, Y Mori, X Yao</td>
<td>TRPM2 CONTRIBUTES TO NEOINTIMAL HYPERPLASIA IN VASCULAR WALLS</td>
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<td>Y Zhang, J Liu, XY Tian, L Wang, JY Luo, WT Wong, Y Huang</td>
<td>BONE MORPHOGENIC PROTEIN 4 SUPPRESSION PROTECTS ENDOTHELIAL FUNCTION IN TYPE 2 DIABETIC MICE</td>
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<td>JF Pan, R Guo, EC Liong, GL Tipoe, ML Fung</td>
<td>OXIDATIVE STRESS INDUCED BY INTERMITTENT HYPOXIA EXACERBATES LIPID ACCUMULATION AND INFLAMMATION IN A CELL MODEL OF NON-ALCOHOLIC STEATOHEPATITIS (NASH)</td>
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<td>YM Liang, MSM Ip, JCW Mak</td>
<td>CIGARETTE SMOKING INDUCED OXIDATIVE STRESS IN RAT HEART</td>
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<td>HXY Hui, P Gu, A Xu</td>
<td>SIRT1 PROTECTS AGAINST OBESITY AND AGEING INDUCED ENDOTHELIAL DYSFUNCTION</td>
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<tr>
<td>L Lu, J Tu, HJ Ballard</td>
<td>VIA ENHANCING BROWN-REMODELING OF PERIVASCULAR ADIPOSE TISSUE (PVAT)</td>
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<td>YJ Xie, S Chan Ho</td>
<td>CONNEXIN-HEMICANNEALS ARE INVOLVED IN ACIDOSIS-INDUCED ATP RELEASE FROM SKELETAL MYOCYTES</td>
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<td>WS Cheang, XY Tian, WT Wong, Y Huang</td>
<td>COMPARISONS OF MEASURED AND SELF-REPORTED ANTHROPOMETRIC VARIABLES AND BLOOD PRESSURE IN A SAMPLE OF HONG KONG ADULT WOMEN</td>
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<td>D Qu, J Liu, CW Lau, Y Huang</td>
<td>INTERLEUKIN-6 IMPAIRS ENDOTHELIUM-DEPENDENT DILATATIONS IN MOUSE ARTERIES THROUGH INCREASING OXIDATIVE STRESS</td>
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<td>CS Lam, GL Tipoe, RCC Chang, KF So, KH Cheung</td>
<td>MECHANISTIC EFFECTS OF LYCIUM BARBARUM POLYSACCHARIDES AGAINST RAT HIPPOCAMPAL INJURIES INDUCED BY CHRONIC INTERTMINTENT HYPOXIA</td>
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<td>HK Wong, RYH Leung, BMY Cheung</td>
<td>EFFECTS OF ADVANCED GLYCAATION ENDPRODUCTS ON ADRENOMEDULLIN GENE EXPRESSION IN MACROPHAGES</td>
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<td>F Wu, R Guo, JF Pan, GL Tipoe, ML Fung</td>
<td>INVOLVEMENT OF AUTOPHAGY IN THE EFFECT OF EXERCISE ON LEFT VENTRICULAR HYPERTROPHY INDUCED BY HIGH FAT DIET IN RATS</td>
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<td>EOC Lau, CY Lo, Y Huang, X Yao</td>
<td>THE FUNCTIONAL ROLE OF TRPV4 CHANNELS IN BARORECEPTOR SENSITIVITY</td>
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<td>J Liu, J Han, HN Zhang, Y Huang</td>
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<td>Y Zhang, SWS Leung, RYK Man</td>
<td>ANTI-INFLAMMATORY EFFECT OF miR-17-3P VIA NF-κB PATHWAY IN HUMAN ENDOTHELIAL CELLS FLUOXETINE-INDUCED CARDIAC DEPRESSION IN ISOLATED PERFUSED RAT HEART</td>
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<td>P Gu, HXY Hui, A Xu</td>
<td>PERIVASCULAR ADIPOSE TISSUE (PVAT) INDUCES ENDOTHELIAL DYSFUNCTION VIA PRODUCTION OF SUPEROXIDE</td>
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<td>H Peng, XQ Cai, TK Tsang, HS Shen, XH Wu, YB Zhou, C Li</td>
<td>DO UNSATURATED FATTY ACIDS HAVE BENEFICIAL EFFECT ON REDUCTION OF STROKE RISK IN HYPERTENSIVE POPULATION?</td>
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<tr>
<td>Z Gao, HN Zhang, J Liu, WS Cheang, L Wang, Y</td>
<td>VITAMIN D PROTECTS VASCULAR FUNCTION IN DIETINDUCED OBESE MICE</td>
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<tr>
<td>WN Hu, JY Luo, L Wang, CW Lau, Y Huang</td>
<td>BMP4 UPREGULATES PDGF-AA EXPRESSION: RELEVANCE TO ENDOTHELIAL DYSFUNCTION</td>
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<td>P Zhang, Y Ma, X Ma, XQ Yao</td>
<td>NITRIC OXIDE AND PROTEIN KINASE G ACTS ON TRPV4-TRPC1-KCa1.1 COMPLEX TO INHIBIT 11,12-EET-INDUCED VASCULAR VASCULAR RELAXATION</td>
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<tr>
<td>Y Wang, XQ Yao</td>
<td>cGMP AND PROTEIN KINASE G REGULATE HYPERTROPHY OF HUMAN EMBRYONIC STEM CELLDERIVED CARDIOMYOCYTES – POSSIBLE ROLE OF ORAI1?</td>
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<tr>
<td>SY Yau, PL Fung, YL Cheung</td>
<td>THE USE OF HEALTH BELIEF MODEL IN PROMOTING Cardiovascular health</td>
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<td>L Sun, YW Tjong, XQ Yao</td>
<td>EMP4 – A POTENTIAL POTASSIUM ION CHANNEL?</td>
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<tr>
<td>DKY Yeung, Q Pu, RYK Man, SWS Leung</td>
<td>INVOLVEMENT OF CALCIUM/CAMODULIN-DEPENDENT KINASE II IN THE REGULATION OF VASCULAR TONE IN PORCINE CORONARY ARTERIES</td>
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<td>WY Liu, KKW Auyeung, JKS Ko, RYK Man, SWS Leung</td>
<td>THE EFFECT OF ASTRAGALUS MEMBRANACEUS ON PATHOLOGICAL ANGIOGENESIS</td>
</tr>
<tr>
<td>G Gao, C Xuan, Q Yang, XC Liu, ZG Liu, GW He</td>
<td>IDENTIFICATION OF ALTERED PLASMA PROTEINS BY PROTEOMIC STUDY IN VALVULAR HEART DISEASES AND THE POTENTIAL CLINICAL SIGNIFICANCE</td>
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Publications of ICSM Members in 2013


Chan HT, Yiu KH, Wong CY, Li SW, Tam S, Tse HF. Increased dietary fruit intake was associated with lower burden of carotid atherosclerosis in Chinese patients with Type 2 diabetes mellitus. Diabet Med 30(1):100-8, 2013.


Liao SY, **Tse HF**. Multipotent (adult) and pluripotent stem cells for heart regeneration: what are the pros and cons? Stem Cell Res Ther 4(6):151, 2013.


Vanhoutte PM. One or two, does it matter as long as the arterial wall is coxygenated? Hypertension 62(2):244-6, 2013.


Yu S, Jia L, Zhang Y, Wu D, Xu Z, Ng CF, To KK, Huang Y, Chan FL. Increased expression of activated endothelial nitric oxide synthase contributes to antiandrogen resistance in


