2011 Annual Report

THE INSTITUTE OF CARDIOVASCULAR SCIENCE AND MEDICINE
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 13th Annual General Meeting on 17th September 2011, and remained in office throughout 2013.

Eighth Council of the ICSM

<table>
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<tr>
<th>Role</th>
<th>Name</th>
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<tr>
<td>Director</td>
<td>Professor B.M.Y. Cheung</td>
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<tr>
<td>Deputy Director</td>
<td>Dr. H.J. Ballard</td>
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<tr>
<td>Honorary Secretary</td>
<td>Dr. G.P.H. Leung</td>
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<td>Honorary Treasurer</td>
<td>Dr. S.W.S. Leung</td>
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<tr>
<td>Council Members</td>
<td>Professor Y.F. Cheung</td>
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<td></td>
<td>Dr. M.L. Fung</td>
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<td></td>
<td>Professor Y. Huang</td>
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<td>Professor R.A. Li</td>
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<td>Dr. E.H.C. Tang</td>
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<td>Professor H.F. Tse</td>
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<td>Professor P.M. Vanhoutte</td>
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<td>Professor T.M. Wong</td>
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<td>Professor X.Q. Yao</td>
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Membership

At the end of the year 2012, membership stood at 123, and consisted of 11 Founding Members, 41 Full Members, 5 Associate members and 66 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 (eg. 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)
Research

Scientific Meetings

The Fifteenth Annual Scientific Meeting: From Cell to Therapy

The Fifteenth Annual Scientific Meeting was held on September 17th 2011 at the Hong Kong Convention & Exhibition Centre, under the Co-chairmanship of Professor Paul Vanhoutte, Professor Ronald Li, Dr. Kathy Lee and Dr. Susan Leung.

The meeting started in the morning with oral and poster presentations by the young investigators: 26 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.

The scientific programme in the afternoon comprised three Symposia: The first Symposium was sponsored by Boehringer Ingelheim Hong Kong Ltd. The topics included ‘A new approach to anticoagulation to prevent thrombotic events’ and ‘The new NICE guideline on the treatment of hypertension’. The lectures were given by Dr. David Siu and Professor Bernard Cheung from the University of Hong Kong. The Second symposium was sponsored by Stem Cell and Regeneration Medicine Consortium. A lecture on ‘Mitochondrial superoxide flashes in progenitor cells’ was delivered by Prof H. Chen from Peking University and another lecture on ‘Gene therapy for congestive heart failure-inhibition of protein phosphatase 1 as a promising therapeutic target’ was given by Dr. D. Sigg from NanoCor Therapeutic Inc. In the third symposium, Professor O. Binah from the Technion-Israel Institute of Technology presented his findings on the “Molecular characterization and functional properties of induced pluripotent stem cells-derived cardiomyocytes from healthy and diseased individual” and Dr. Q Lian from the University of Hong Kong talked about the ‘Therapeutic potential of pluripotent stem cell-derived mesenchymal stem cells in cardiovascular regeneration’.

The meeting closed with a brief address from ICSM Director, Professor Paul Vanhoutte, and presentation ceremony for the Young Investigator Awards.
## External Research Grants awarded in 2011 to members of the ICSM

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<tr>
<th>Principal/Co Investigator</th>
<th>Awarding Body</th>
<th>Project Title</th>
<th>Awards (HK$)</th>
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<tbody>
<tr>
<td>Prof. RYK Man (PI)</td>
<td>RGC GRF</td>
<td>Peroxisome Proliferator-Activated Receptors and Vascular Function</td>
<td>950,000</td>
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<tr>
<td>Prof. HF Tse (PI)</td>
<td>RGC GRF</td>
<td>Attenuation of Left Ventricular Remodeling and Improvement of Myocardial Function with Spinal Cord Stimulation in Post-myocardial Infarction Heart Failure</td>
<td>1,010,000</td>
</tr>
<tr>
<td>Prof. PM Vanhoutte (PI)</td>
<td>RGC GRF</td>
<td>Vascular protective functions of the anti-aging protein SIRT1 by targeting LKB1/AMPK pathway in endothelial cells: tipping the balance towards vascular homeostasis</td>
<td>1,120,000</td>
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<tr>
<td>Prof. Y Huang (PI)</td>
<td>RGC GRF</td>
<td>Endoplasmic reticulum stress mediates endothelial dysfunction in diabetes and obesity</td>
<td>1,000,000</td>
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ICSM publications in 2011

Abstracts from the Fifteen Annual Scientific Meeting (held in September 2011) were published in October 2011 issue of the Journal of the Hong Kong College of Cardiology (Volume 19, No. 2, pp.63-80)

BMY Cheung  THE NEW NICE GUIDELINES ON THE TREATMENT OF HYPERTENSION  65
H Cheng  MITOCHONDRIAL SUPEROXIDE FLASHES IN PROGENITOR CELLS  65
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Q Lian  THERAPEUTIC POTENTIAL OF PLUIPOTENT STEM CELL-DERIVED MESENCHYMAL STEM CELLS IN CARDIOVASCULAR REGENERATION  67
J Liu, WT Wong, XY Tian, CW Lau, X Yao, Y Huang  CRITICAL ROLE OF PI3K/AKT IN THE RESTORATION OF ENDOTHELIAL FUNCTION BY HEME OXYGENASE-1 IN DIABETIC DB/DB MICE  68
SYW Kwan  EPAC-SELECTIVE CYCLIC AMP ANALOG, 8-PCPT-2’-O-ME-CAMP, INDUCED RELAXATION IN THE PORCINE CORONARY ARTERY IN A RAP1-INDEPENDENT MECHANISM  68
NR Samaranayake, KL Ong, RYH Leung, BMY Cheung  ANTI-OBESITY DRUGS-ARE THEY UNDERUSED IN THE UNITED STATES?  69
YY Zhang, GR Li  EFFECTS OF ION CHANNELS ON PROLIFERATION AND DIFFERENTIATION IN HUMAN MESENCHYMAL STEM CELLS  69
Y Zhang, SWS Leung, RYK Man  EFFECT OF LUTEOLIN ON ENDOTHELIUM-DEPENDENT RELAXATION IS DIFFERENT BETWEEN MALE AND FEMALE RAT MESENTERIC ARTERIES: RELATIONSHIP WITH ENDOTHELIUM-DERIVED HYPERPOLARIZING FACTOR AND CYCLOOXYGENASE PATHWAYS  70
HJ Wu, GR Li  CARDIOPROTECTION OF THE NATURAL FLAVONE ACACETIN AGAINST ISCHEMIA/REPERFUSION INJURY IN ISOLATED RAT HEARTS  70
WS Cheang, WT Wong, XY Tian, Q Yang, CW Lau, GW He, Y Huang

AVE3085 RESTORES ENDOTHELIAL FUNCTION IN TYPE-2 DIABETIC DB/DB MICE THROUGH ENHANCEMENT OF ENOS EXPRESSION

Z Li, Y Wang, PM Vanhoutte

HEME OXYGENASE-1 INDUCTION BY HEMIN ENHANCES EDHF-MEDIATED RELAXATIONS IN THE MESENTERIC ARTERY OF THE SHR

SYT Lin, RWS Li, ASM Sit, YW Kwan, GPH Leung

INHIBITION OF NUCLEOSIDE TRANSPORTERS IN ENDOTHELIAL CELLS BY EMODIN

Y Liu, ML Fung

INVESTIGATION OF NADPH OXIDASE AND RENIN-ANGIOTENSIN SYSTEM IN TISSUE INFLAMMATION OF THE RAT ADRENAL MEDULLA DURING INTERMITTENT HYPOXIA

L Lu, J Tu, GR Li, HJ Ballard

STUDIES ON THE SIGNAL TRANSDUCTION MECHANISM FOR ACIDOYSIS-INDUCED ATP RELEASE FROM L6 SKELETAL MYOCYTES

EV Tonleu, XH Liu

CELL THERAPY BEHIND THE ESSAY TUBES AND THE LAB COAT

YZ Zhao, SWS Leung, PM Vanhoutte

ACTIVATION OF α1-ADRENERGIC RECEPTORS CAUSES THROMBOXANE-PROSTANOID RECEPTOR DESENSITIZATION IN THE AORTA OF THE SPONTANEOUSLY HYPERTENSIVE RAT

H Che, Dr Li

FUNCTIONAL TRANSIENT RECEPTOR POTENTIAL CHANNELS AND ADIPOGENIC REGULATION IN HUMAN PREADIPOCYTES

R Hu

AGING, HYPERTENSION AND HEART ENLARGEMENT INCREASED THE RISK OF VENTRICULAR ARRHYTHMIA IN GENERAL POPULATION

K Komamura, Y Adachi, J Kawai, M Miyamoto, G Uehara, M Inagaki

DRUG-INDUCED QT PROLOLOGATION IN GUINEA PIG IS AUTOMATICALLY ANALYZED BY MICRO-MAGNETOCARIOGRAHY SYSTEM WITH SUPERCONDUCTING QUANTUM INTERFERENCE DEVEICE: COMPARISON WITH ECG

ASM Sit, RWS Li, RYK Man, YW Kwan, M Hausman, PM Vanhoutte, GPH Leung, SWS Leung, MLY Chan, GSK Man, RYK Man

PROTECTION AGAINST OXIDATIVE STRESS-INDUCED DAMAGE IN ENDOTHELIAL CELLS BY ERGOTHIONEINE

OVARIECTOMY PROMOTES THE ENHANCEMENT OF ENDOTHELUM-DERIVED HYPERPOLARIZING FACTOR-MEDIATED RELAXATION IN MESENTERIC ARTERIES OF RATS WITH CHRONIC NITRIC OXIDE SYNTHASE INHIBITION

WJ Liu, GR Li

PERINERGIC RECEPTORS MEDIATE
PROLIFERATION AND MIGRATION IN CULTURED HUMAN CARDIAC FIBROBLASTS

XY Xu, J Xia, XY Huang, D Gao, JB Zhou, JF Lian, JQ Zhou

ELECTROPHYSIOLOGICAL PROPERTIES OF ENDOTHELIAL PROGENITOR CELLS FROM RAT BONE MARROW MONONUCLEAR CELLS

C Qu, SWS Leung, PM Vanhoutte, RYK Man

WY14643, THE DUAL PPAR ALPHA/GAMMA AGONIST, IMPROVES ENDOTHELIAL FUNCTIONS IN THE AORTA OF THE SPONTANEOUSLY HYPERTENSIVE RAT

Xc Ru, X Ma, S Wan, Y Huang, XY Yao

UPREGULATED TRPM2 AND ITS POTENTIAL ROLE IN NEOINTIMAL HYPERPLASIA

L Sun, WY Wong, XQ Yao

THE FUNCTIONAL ROLE OF TRPM2 CHANNELS IN H2O2-INDUCED CA2+ RISES AND CELL APOPTOSIS IN ENDOTHELIAL CELLS

SY Yau

ACTIVE TRANSPORT FOR CARDIOVASCULAR HEALTH

Y Zhang, J Liu, XY Tian, WT Wong, Y Huang

BONE MORPHOGENIC PROTEIN-4 IMPAIRS THE ENDOTHELIAL FUNCTION THROUGH INCREASING OF OXIDATIVE STRESS IN TYPE 2 DIABETIC MICE
Publications of ICSM Members in 2011


Hsin MK, Wan S, Yim AP. Cytokine gene expression after lung cancer resection may be affected by the choice of surgical access. *Chest* 140(3): 830-1, 2011.


Xia Z, **Vanhoutte PM.** Nitric oxide and protection against cardiac ischemia. *Current Pharmaceutical Design* 17(18): 1774-82, 2011.


Yiu KH, Pong V, Siu CW, **Lau CP, Tse HF.** Long-term oral nitrate therapy is associated with adverse outcome in diabetic patients following elective percutaneous coronary intervention. *Cardiovascular Diabetology* 10: 52, 2011.


