



Bristol Summer School in Cardiac Biology



Monday 4th July – Thursday 7th July
Wills Hall, Bristol



THE BRITISH SOCIETY FOR CARDIOVASCULAR RESEARCH





Dear post-graduate students and young post-docs,

Welcome to the BHF-sponsored Cardiac Biology Summer School.

We look forward to meeting you and hope you enjoy both the meeting and your stay in Bristol.

With best wishes,

Saadeh Suleiman and the organisers:

Raimondo Ascione
Sarah George
Andy James
Elinor Griffiths
Rebecca Sitsapesan
Michelle Greenslade
Katie Flight

The summer school is sponsored by:

[British Heart Foundation](#); [The Physiological Society](#); [Roche Diagnostics Ltd](#); [ADInstruments](#), [Novartis](#); and [The Company of Biologists](#) on behalf of their journals, [Journal of Experimental Biology](#) and [Disease Models & Mechanisms](#).

The Bristol Heart Institute or BHI was founded in 1995 and based on our success has expanded substantially. The BHI consists of over 250 basic scientist and clinical researchers located in the University of Bristol and across Bristol NHS Trusts. Our mission is to translate basic scientific research into novel clinical practice thereby improving patient outcome and care. It brings together internationally respected experts from many disciplines of cardiovascular science and disease. Indeed, the BHI is now an internationally recognised centre of excellence for performing interdisciplinary cardiovascular research that takes basic science discoveries into the clinic. As well as improving collaboration between scientists and clinicians within the BHI, and improving medical treatment of cardiovascular diseases, we aim to communicate our research findings to the public.

British Heart Foundation-Sponsored Summer School in Cardiac Biology

Monday 4th – Thursday 7th July 2011

Wills Hall, Parrys Lane, Stoke Bishop, Bristol BS9 1AE

Programme

Monday 4th July

- 9.00 – 12.00 **Registration** and room key collection
Poster hanging: posters will be displayed throughout the Summer School
- 12.00 – 13.50 Lunch to be served at Wills Hall
- 13.50 – 14.00 Welcome and introductions
[Saadeh Suleiman, Professor of Cardiac Physiology \(Bristol\)](#)
- 14.00 – 16.00 **Session I – Cardiac Function: Ca²⁺ is Key**
Chair: Rebecca Sitsapesan
[Clive Orchard \(Bristol\)](#)
“The heart of the matter: Ca²⁺ made interesting”
- [Alan Williams \(Cardiff\)](#)
“Single-channel properties of ryanodine receptors - why are they such efficient Ca²⁺-release channels?”
- [Ashraf Kitmitto \(Manchester\)](#)
“Unravelling cardiac SR luminal Ca²⁺-sensing through molecular and biophysical studies”
- 16.00 – 16.30 Refreshments Break and Exhibition
- 16.30 – 17.50 **Session II – Cardiac Dysfunction: Mechanisms and Management**
Chair: Raimondo Ascione
[Kieran Clarke \(Oxford\)](#)
“Mitochondrial Uncoupling, Energetics and Cardiac Dysfunction in Hypoxia”
- [Cesare Terracciano \(Imperial\)](#)
“Regeneration and recovery strategies for the treatment of heart failure”
- 17.50 – 19.30 Poster Session (with drinks)
- 19.30 – 20.30 Dinner to be served at Wills Hall
- 20.30 - Free evening (Social event to be arranged)

Tuesday 5th July

- 8.00 – 9.00 Breakfast in Wills Hall
- 09.00 – 11.10 **Session III – Cardiac Arrhythmias: Mapping the beat**
Chair: Andy James
[Chris Huang \(Cambridge\)](#)
“Ventricular arrhythmogenesis in genetically modified murine hearts”
- [Francis Burton \(Glasgow\)](#)
“Optical mapping of normal and arrhythmic hearts”
- [Olivier Bernus \(Leeds\)](#)
“Pro-arrhythmic right ventricular electrophysiological remodelling in a rat model of pulmonary hypertension”
- 11.10 – 11.40 Refreshments Break and Exhibition
- 11.40 – 13.30 **Session IV – Experimental Models of Cardiac Disease**
Chair: Sarah George
- [Saadeh Suleiman \(Bristol\)](#)
“A mouse model of coronary artery disease”
- [Ajay Shah \(KCL\)](#)
“Redox regulation of cardiac remodeling: an integrative approach”
- 13.30 – 14.30 Lunch to be served at Wills Hall
- 14.30 – 16.30 **How-To Workshops**
[Jules Hancox \(Bristol\)](#)
[Julian Paton \(Bristol\)](#)
[Henry French \(British Heart Foundation\)](#)
- 17.00 – 17.30 Travel time to SS Great Britain, Bristol
- 18.00 – 19.00 Tour of SS Great Britain, Bristol
- 20.00 - Dinner and drinks on SS Great Britain

Wednesday, 6th July

8.00 – 9.00	Breakfast
9.00 – 11.00	Session V – Novel concepts in cardiomyocyte signalling <i>Chair: Dr Rebecca Sitsapesan</i> Sarah Calaghan (Leeds) <i>“Caveolae in cardiac health and disease”</i> Mark Cannell (Bristol) <i>“Resolving cardiac excitation-contraction coupling with biophotonics”</i>
11.00 - 11.30	Coffee break and Exhibition
11.30 – 13.00	Session VI - Mitochondria in the heart <i>Chair: Dr Elinor Griffiths</i> Andrew Halestrap (Bristol) <i>“Role of mitochondrial permeability transition in cardioprotection”</i> Derek Hausenloy (UCL) <i>“Mitochondrial morphology and cardiac disease”</i>
13.00 – 14.20	Lunch
14.20 – 15.00	Roger Foo (Cambridge) <i>“Epigenetic mouse models of cardiomyopathy”</i>
15.00 – 17.30	Lab visits
18.30 – 20.00	Dinner at Wills Hall (with entertainment)
20:30 -	Post dinner presentation: a personal voyage of discovery Raimondo Ascione, Professor of Cardiac Surgery (Bristol)



Thursday 7th July

8.00 – 9.00 Breakfast

9.00 – 10.30 Free Communications – The Organisers' Choice

[Claire Morley](#) *"The TRPM4 in Urinary Bladder Smooth Muscle Function"*

[Divya Rajamohan](#) *"In Vitro Modelling Of The Cardiac Channelopathies Using Human Induced Pluripotent Stem Cells"*

[Gillian Quigley](#) *"Does Inflammation Play A Role In The Remodelling Of The Cardiac Conduction System In Heart "*

[Olubukunola Pickard](#) *"Cardioprotection Mediated Through Green Tea: Synthesis And Biological Evaluations Of Modified Epicatechin And Epicatechin-3-Gallate Analogues"*

[Sadat Edroos](#) *"Remote Conditioning Of Rat Ventricular Myocytes By Rat And Human Derived Cardioprotective Solutions"*

[Victoria Mascetti](#) *"Wnt/Beta-Catenin Signalling At The Heart Of Cardiogenic Mesoderm Specification"*

10.30 – 11.00 Coffee break

11.00 - 11.30 Free Communications

11.30 – 12.00 Poster and oral communication awards

12.00 – 14.00 Lunch at Wills Hall

14.00 - Closure

Posters

- 1. USING ENDOTHELIAL PROGENITOR CELLS AS A GENETIC SHUTTLE TO ALTER CENTRAL CONTROL OF CARDIOVASCULAR FUNCTION IN CONSCIOUS RATS**
Ana M. Alviar Baquero, Nicolle Kränkel, John Whitaker, James Hewinson, Mark Dewhurst¹, Paolo Madeddu & Julian F.R. Paton
Bristol Heart Institute, University of Bristol, Bristol, UK; ¹Pfizer, Sandwich, Kent, UK
- 2. HIGH THROUGHPUT SCREENING OF SURFACES FOR CARDIOMYOCYTE CULTURE**
A.K. Patel, C. Denning¹, M. Davies² and M. Alexander².
Wolfson Centre for Stem cells, Tissue Engineering and Modelling. ²Laboratory of Biophysics and Surface Analysis. University of Nottingham.
- 3. THE EFFECT OF A NON-OBESOGENIC HIGH-FAT DIET ON EXCITATION-CONTRACTION COUPLING IN CARDIOMYOCYTES**
B. Littlejohns, H. Lin, R. Katare, G.D. Angelini and M-S. Suleiman.
Bristol Heart Institute, University of Bristol
- 4. THE TRPM4 IN URINARY BLADDER SMOOTH MUSCLE FUNCTION**
C. L. Morley, M. Werner, A. M. Heagerty.
Faculty of Medical and Human Sciences, Cardiovascular Group, University of Manchester, Greater Manchester, UK.
- 5. B₂-ADRENOCEPTOR SIGNALS IN CARDIOMYOCYTES ARE COMPARTMENTALISED BY CAVEOLAE THROUGH CURTAILED CAMP GENERATION AND PHOSPHATASE ACTIVATION**
David A. MacDougall¹, Shailesh R. Agarwal², Elizabeth A. Stopford¹, John Colyer¹, Robert D. Harvey² & Sarah C. Calaghan¹.
¹Institute of Membrane and Systems Biology, University of Leeds, Leeds, U.K.
²Department of Pharmacology, University of Nevada, Reno, NV, U.S.A
- 6. IN VITRO MODELLING OF THE CARDIAC CHANNELOPATHIES USING HUMAN INDUCED PLURIPOTENT STEM CELLS**
Divya Rajamohan, Elena Matsa and Chris Denning
University of Nottingham
- 7. THE ROLE OF CLOSELY ASSOCIATED PROTEINS AS REGULATORS OF RYANODINE RECEPTOR FUNCTION IN HEART FAILURE**
E. Galfré*, S.J. Pitt*, E. Venturi, S. O'Neill & R. Sitsapesan
School of Physiology and Pharmacology. University of Bristol

- 8. MITSUGUMIN23, A PROTEIN ASSOCIATED WITH INTRACELLULAR Ca^{2+} -STORES, BEHAVES AS AN ION-CHANNEL THAT CAN CONDUCT Ca^{2+}**
Elisa Venturi, Kazuhiro Mio, Miyuki Nishi, Toshihiko Ogura, Toshio Moriya, Samantha J. Pitt, Kazutaka Okuda, Rebecca Sitsapesan, Chikara Sato, and Hiroshi Takeshima
School of Physiology & Pharmacology Medical Sciences Building, University of Bristol
- 9. GLP-1 ELUTING STEM CELL THERAPY (GLP-1 CELLBEADS) PROMOTES POST-MYOCARDIAL INFARCTION HEALING**
E.J. Wright¹, K.A. Farrell¹, N. Malik¹, C. Wallrapp², P. Geigle², A.L. Lewis³, P. W. Stratford³, C. M. Holt¹
¹Cardiovascular Research Group, University of Manchester, ²CellMed AG, Industriestrasse, Alzenau, Germany; ³Biocompatibles UK Ltd, Farnham, Surrey
- 10. DOES INFLAMMATION PLAY A ROLE IN THE REMODELLING OF THE CARDIAC CONDUCTION SYSTEM IN HEART**
Quigley G, Cai X, Yanni JF, Jones CB, Hutcheon RC, Corno AF, Jarvis JC, Monfredi O, Hao G, Dobrzynski H, Boyett MR, Hart G
Cardiovascular Research Group, University of Manchester
- 11. THE VASCULAR SMOOTH MUSCLE T-TYPE CALCIUM CHANNEL: AN ANTI-PROLIFERATIVE TARGET FOR HEME OXYGENASE-1?**
Hayley Duckles, Hannah E. Boycott, Jason L. Scragg, John P. Boyle, Karen E. Porter, Chris Peers.
Division of Cardiovascular and Neuronal Remodelling, LIGHT, University of Leeds
- 12. INVESTIGATING THE INVOLVEMENT OF VITAMIN D PATHWAY IN ATHEROSCLEROSIS**
Joanie Mok, Dr. Chris Jackson
University of Bristol, Bristol Heart Institute
- 13. ADVANCES IN PULMONARY AND CARDIAC PROTECTION**
L.Cartwright, R. Ishtiaq, S.Suleiman, R. Ascione
Bristol Heart Institute, University of Bristol
- 14. ROLES OF TRANSGLUTAMINASE 2 AND FACTOR XIII-A IN VESSEL WALL INTEGRITY**
Laura Newell*¹, Richard Pease², Peter Grant², Christopher Jackson¹.
1. Bristol Heart Institute, University of Bristol, UK
2. Leeds Institute of Genetics, Health & Therapeutics, University of Leeds, UK
- 15. CARDIOPROTECTION MEDIATED THROUGH GREEN TEA: SYNTHESIS AND BIOLOGICAL EVALUATIONS OF MODIFIED EPICATECHIN AND EPICATECHIN-3-GALLATE ANALOGUES**
Olubukunola Pickard, Paul Townsend and Ali Tavassoli
University of Southampton, School of Chemistry

16. A NOVEL DRUG-LIKE INHIBITOR OF PLASMA MEMBRANE CALCIUM ATPASE ISOFORM4 (PMCA4) IS EFFICACIOUS IN THE PREVENTION OF CARDIAC HYPERTROPHY *IN VITRO* AND *IN VIVO*

Riham Abou-Leisa, Tamer M. A. Mohamed, Delvac Oceandy, Sukhpal Prehar, Min Zi, Florence Baudoin, Ludwig Neyses, Elizabeth J. Cartwright.

Cardiovascular Medicine Research Group, Manchester Academic Health Science Centre, University of Manchester

17. REMOTE CONDITIONING OF RAT VENTRICULAR MYOCYTES BY RAT AND HUMAN DERIVED CARDIOPROTECTIVE SOLUTIONS

S.A. Edroos, R.H. Ghelani, H.E. Turrell, N.J. Samani and G.C. Rodrigo

University of Leicester, Department of Cardiovascular Sciences, Glenfield Hospital

18. THE ROLE OF CLOSELY ASSOCIATED PROTEINS AS REGULATORS OF RYANODINE RECEPTOR FUNCTION IN HEART FAILURE

S.J. Pitt*, E. Galfré*, E. Venturi, S. O'Neill & R. Sitsapesan

School of Physiology and Pharmacology, University of Bristol

19. WNT/BETA-CATENIN SIGNALLING AT THE HEART OF CARIOGENIC MESODERM SPECIFICATION

V. Mascetti *, S. Mendjan, A.S. Bernardo, D. Ortmann and R.A. Pedersen

Department of Surgery and the Anne McLaren Laboratory for Regenerative Medicine, School of Clinical Medicine, University of Cambridge

20. OXIDATIVE STRESS AND THE ROLE OF MITOCHONDRIA IN HEARTS WITH CHRONIC CORONARY ARTERY DISEASES

SMJ Duggan, M-S. Suleiman and G.D. Angelini

Bristol Heart Institute, University of Bristol



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