

# What's on today?

08.45 **Symposia**

All Lecture Theatres

Pages 55–60

12.30 **Annual General Meeting of The Physiological Society**

Lecture Theatre 1 – *University Museum of Natural History*

Only Ordinary and Honorary Members of The Physiological Society can attend and vote at the AGM, Affiliates can also attend but may not vote  
Page 84

14.30 **Oral Communications C37–C72**

All Lecture Theatres

Pages 61–66

16.00 **Poster Communications PC122–PC246**

Marquee behind University Club

Pages 67–83

18.00 **Annual Review Prize Lecture**

Lecture Theatre 1 – *University Museum of Natural History*

Page 14

19.15 **Society Dinner**

St Catherine's College

Page 117

Wednesday 13 July

# Experimental Physiology

## Are you eligible to compete for the EP Early Career Author's Prize?

The *Experimental Physiology* Early Career Author's prize has been established to reward early career authors who publish outstanding research papers in *Experimental Physiology* which best meet the journal's remit of translation and integration.

The first prize, sponsored jointly by The Physiological Society and the publishers, Wiley-Blackwell, will comprise **\$1000**. There will be a runner's up prize of **\$500**.

Entries will be judged from articles published during the year by the *Experimental Physiology*.

The 2010 prizes will be presented at this Meeting on Tuesday 12th July. The 2011 prizes will be presented at 'Physiology 2012' in Edinburgh.

Entries are invited from scientists who are either the first or last author of a research article published in *Experimental Physiology* during the prize year.

Where more than one Early Author has contributed to a paper the prize will be split on the advice of the senior author.

Applicants must have received their research degree (MD, PhD or equivalent) less than 6 years before submitting the paper.

In the case of candidates who have both a MD and PhD the date of the most recently awarded degree should be used.

PHD students are also eligible to apply.

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# Molecular basis for electrical signalling in the cardiovascular and nervous systems

## Cardiac & Respiratory Physiology

Wednesday 13 July 2011

*LT1 (University Museum of Natural History)*

Organised by David Fedida and Chris Ahern, *University of British Columbia, Canada*

- 
- 08.45** Welcome and introduction by the organisers
- 
- 09.00** **Mechanisms of gating and modulation in voltage-dependent sodium channels**  
SA42 Baron Chanda, *University of Wisconsin-Madison, USA*
- 
- 09.30** **Voltage sensor movements in cardiac IKs channels suggest a mechanism for how KCNE1 affects KCNQ1 channels**  
SA43 H Peter Larsson, *University of Miami, USA*
- 
- 10.00** **Development of unnatural fluorescent amino acids to probe ion channel conformations**  
SA44 Stephan Pless, *University of British Columbia, Canada*
- 
- 10.30** Refreshments in the Marquee behind University Club
- 
- 11.15** **Fast voltage sensor movement and slow pore opening of hERG channels brought to light using Voltage-Clamp Fluorimetry**  
SA45 Zeineb Es-Salah Lamoureux, *University of Nantes, France*
- 
- 11.45** **Accessing the intracellular compartment to examine the conformational dynamics of the Na,K-ATPase**  
SA46 Robert Dempski, *Worcester Polytechnic Institute, USA*
-

# Sex and autonomic activity in humans

## Human & Exercise Physiology

Wednesday 13 July 2011

### LT2 (Experimental Psychology A)

Organised by Jason Carter, *Michigan Technological University, Houghton, USA*, and Nisha Charkoudian, *Mayo Clinic, Rochester, USA*

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**08.45** Welcome and introduction by the organisers

---

**09.00** **Dick, Jane and sympathetic activity: sex differences in autonomic control of blood pressure**  
SA47  
Nisha Charkoudian, *Mayo Clinic, Rochester, USA*

---

**09.30** **Testosterone and sympathetic nerve activity in women**  
SA48  
Yrsa Sverrisdottir, *University of Gothenburg, Sweden*

---

**10.00** **Sex and sympathetic neural firing patterns in humans**  
SA49  
Jason Carter, *Michigan Technological University, Houghton, USA*

---

**10.30** Refreshments in the Marquee behind University Club

---

**11.15** **Sex and neural cardiovascular responses to dynamic exercise in humans**  
SA50  
Paul Fadel, *University of Missouri, USA*

---

**11.45** **Pregnancy and sympathetic neural activity in humans**  
SA51  
Qi Fu, *University of Texas, USA*

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# Central and peripheral messengers of metabolism

## Metabolism & Endocrinology

Joint International Exchange  
Symposium with the American  
Physiological Society

Wednesday 13 July 2011

*LT3 (Large lecture theatre Sherrington Building)*

Organised by Willis K Samson *Saint Louis University, USA*

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**08.45** Welcome and introduction by the organisers

---

**09.00** **Hypothalamic pathways regulating energy homeostasis**  
**SA52** Nina Balthasar, *University of Bristol, UK*

---

**09.30** **How peripheral satiety signals access and influence the brain**  
**SA53** Alastair V Ferguson, *Queen's University, Kingston, Canada*

---

**10.00** **Novel brain-islet modulators of glucose homeostasis**  
**SA54** Christian Broberger, *Karolinska Institute, Stockholm, Sweden*

---

**10.30** Refreshments in the Marquee behind University Club

---

**11.15** **The role of gut hormones in the control of body weight and energy homeostasis**  
**SA55** Rachel Batterham, *University College London, UK*

---

**11.45** **Coordinated signaling by endocrine factors in both hypothalamus and pancreas**  
**SA56** Willis K Samson, *Saint Louis University, USA*

---

Symposium

Today's **Metabolism & Endocrinology** Oral Communications will be held in this lecture theatre from 14.30, see page 63

For details of the Lecture Theatres, see page 8

**ME**

# Vascular control by the extracellular matrix

## Vascular & Smooth Muscle Physiology

Wednesday 13 July 2011

LT4 (Pharmacology lecture theatre)



Sponsored by DMT

Organised by Ulrich Pohl, *Ludwig-Maximilians-Universität, Munich, Germany*

- 
- 08.45** Welcome and introduction by the organisers
- 
- 09.00** **Vascular extracellular matrix proteins controlling endothelial and smooth muscle function**  
SA57 Madeleine Durbeej-Hjalt, *Lund University, Sweden*
- 
- 09.30** **Insights from proteomic analyses of adhesion signalling**  
SA58 Martin Humphries, *University of Manchester, UK*
- 
- 10.00** **Integrins and matricryptins in the control of microvascular tone and structural adaptation**  
SA59 Gerald Meininger, *University of Missouri, Columbia, USA*
- 
- 10.30** Refreshments in the Marquee behind University Club
- 
- 11.15** **Control of shear stress induced endothelial growth factor release by extracellular matrix proteins**  
SA60 Ulrich Pohl, *Ludwig-Maximilians-Universität, Munich, Germany*
- 
- 11.45** **A proangiogenic role of the vascular basement membrane**  
SA61 Luca Primo, *University of Torino, Italy*
-

# The anoctamin (TMEM16) gene family: Calcium-activated chloride channels come of age

## Epithelia & Membrane Transport

Wednesday 13 July 2011

### LT5 (Lecture theatre Le Gros Clark)

Organised by John Winpenny, *University of East Anglia, UK*, and Michael Gray, *Newcastle University, UK*

---

**08.45** Welcome and introduction by the organisers

---

**09.00** **The anoctamin family: properties of novel anoctamin 1  
SA62 (TMEM16A) isoforms**

Luis Galletta, *Istituto Giannina Gaslini, Genova, Italy*

---

**09.30** **Physiological significance and activation of the epithelial  
SA63 calcium-dependent chloride channel TMEM16A**

Karl Kunzelmann, *Universitat Regensburg, Germany*

---

**10.00** **The role of anoctamins in olfaction**

**SA64** Anna Menini, *International School for Advanced Studies, Trieste, Italy*

---

**10.30** Refreshments in the Marquee behind University Club

---

**11.15** **Tmem16a expressed by interstitial cells of Cajal contributes to  
SA65 pacemaker activity and neural responses in visceral smooth  
muscles**

Kenton Sanders, *University of Nevada, USA*

---

**11.45** **Anoctamin mouse models and disease**

Richard Boucher, *University of North Carolina, USA*

---

Today's Epithelia & Membrane Transport Oral Communications will be held in this lecture theatre from 14.30, see page 65

For details of the Lecture Theatres, see page 8

EM

Symposium

# Human hand function: the limitations of brain and brawn

Cellular & Integrative Neuroscience

Wednesday 13 July 2011

The Journal of  
**Physiology**

**LT6** (*Experimental Psychology B*)

Sponsored by *Experimental Physiology*

Organised by Richard Fitzpatrick and Simon Gandevia, *Neuroscience Research Australia and University of New South Wales, Sydney, Australia*

- 
- 08.45** Welcome and introduction by the organisers
- 
- 09.00** **Mechanical properties and neural control of human hand motor units**  
SA66  
Andrew Fuglevand, *University of Arizona, USA*
- 
- 09.30** **Cortical and non-cortical matters**  
Stuart Baker, *Newcastle University, UK*
- 
- 10.00** **The range of constraints for control of the human hand**  
SA67  
Simon Gandevia, *Neuroscience Research Australia and University of New South Wales, Sydney, Australia*
- 
- 10.30** Refreshments in the Marquee behind University Club
- 
- 11.15** **Changing circuits that control the fingers: Dissociating motor cortex from the motor**  
SA68  
Marc Scheiber, *University of Rochester, USA*
- 
- 11.45** **What leads to recovery of hand function after stroke?**  
SA69  
Nick Ward, *University College London, UK*
- 

*The Journal's* new Editor-in-Chief – David Paterson – outlines his plans for the future on page 123.

Whilst the Senior Statistics Editor – Gordon Drummond – has written an editorial on best practice in statistical reporting on page 86.

Today's **Cellular & Integrative Neuroscience** Oral Communications will be held in this lecture theatre from 14.30, see page 66

For details of the Lecture Theatres, see page 8



# Oral Communications

## Cardiac & Respiratory Physiology

Wednesday 13 July 2011

*LT1 (University Museum of Natural History)*

The names below are the presenting authors, for a full list of authors see the abstract

- 
- C37    **The Pore Structure and Gating Mechanism of K2P Channels**  
14.30    Stephen Tucker
- 
- C38    **Right ventricular origin of arrhythmias in Brugada Syndrome is due to lower Na<sup>+</sup> channel expression and function**  
14.45    Claire Martin
- 
- C39    **Blebbistatin - the excitation-contraction uncoupler significantly affects cardiac electrophysiological and calcium homeostasis**  
15.00    Ravi Narang
- 
- C40    **Influence of connexin expression and co-expression levels on action potential propagation in the HL-1 cells**  
15.15    Priyanthi Dias
- 
- C41    **Nav1.5 deficiency triggered TGF- $\beta$ 1-mediated fibrosis as a key mechanism producing sinus node dysfunction associated with Scn5a disruption and aging in mice**  
15.30    Ming Lei
- 
- C42    **Non-dipper-like hypertension in sequestosome1/p62/A170 deficient mice in early phase of obesity**  
15.45    Eiji Warabi
- 

Today's [Cardiac & Respiratory Physiology](#) Poster Communications will be held in the Marquee behind University Club from 16.00, see page 67

For details of the Lecture Theatres, see page 8

# Oral Communications

## Human & Exercise Physiology

Wednesday 13 July 2011

### LT2 (Experimental Psychology A)

The names below are the presenting authors, for a full list of authors see the abstract

- 
- C43  
14.30 **Influence of ovarian cycle on muscle metaboreflex control of spontaneous cardiac baroreflex sensitivity in young women.**  
Doreen Hartwich
- 
- C44  
14.45 **Overexpression of constitutively active Yes-associated protein (Yap) in muscle fibres of adult mice results in myopathy and is lethal after ≈40 days**  
Henning Wackerhage
- 
- C45  
15.00 **The effect of ethyl alcohol on contractions of isolated mammalian skeletal muscle fibres.**  
Peter Robinson
- 
- C46  
15.15 **CaMKII overexpression reverses the effects of electroporation-induced damage on skeletal muscle twitch parameters**  
Wouter Eilers
- 
- C47  
15.30 **Is the standing configuration a postural set that is aimed for?**  
Irene Di Giulio
- 
- C48  
15.45 **Dual processing changes reactive balance in healthy adults**  
Matthew Liston
-

# Oral Communications

## Metabolism & Endocrinology

Wednesday 13 July 2011

*LT3 (Large lecture theatre Sherrington Building)*

The names below are the presenting authors, for a full list of authors see the abstract

- 
- C49 **Does gastrin play a role in haematopoiesis?**  
14.30 Graham Baldwin
- 
- C50 **Mutations of the same conserved glutamate residue in NBD2 of the SUR1 subunit of the  $K_{ATP}$  channel can result in either hyperinsulinism or neonatal diabetes**  
14.45 Roope Mannikko
- 
- C51 **Adaptive metabolic response of whole body and skeletal muscle to periodic high sugar availability in lean sedentary individuals**  
15.00 Hans-Peter Kubis
- 
- C52 **Clock gene expression in offspring skeletal muscles in a mouse model of developmental origins of the metabolic syndrome**  
15.15 Nikesh Patel
- 
- C53 **High-fat diet-fed nuclear factor-erythroid 2-related factor 2-null mice demonstrate increased susceptibility to non-alcoholic steatohepatitis without peripheral insulin resistance.**  
15.30 Mike Ashford
- 
- C54 **Regulation of hepatic aquaporin-9 in starved rats is gender specific**  
15.45 Janne Lebeck
- 

Today's **Metabolism & Endocrinology** Poster Communications will be held in the Marquee behind University Club from 16.00, see page 79

# Oral Communications

## Vascular & Smooth Muscle Physiology

Wednesday 13 July 2011

*LT4 (Pharmacology lecture theatre)*

The names below are the presenting authors, for a full list of authors see the abstract

---

C55 **Ca<sup>2+</sup>-sparks promote development of myogenic tone in rat retinal arterioles**  
14.30  
Graham McGeown

---

C56 **Signalling pathways involved in the superoxide anion production in response to serotonin in rat intrapulmonary arteries**  
14.45  
Christelle Guibert

---

C57 **Distinct responses to prostaglandin E<sub>2</sub> (PGE<sub>2</sub>) by human myometrial smooth muscle cells isolated from the upper and lower segment of the pregnant human uterus**  
15.00  
Donna Slater

---

C58 **Role of Rho-kinase and Src-Family Kinases in carbachol-induced contraction of isolated rat bronchioles.**  
15.15  
Nneka Irechukwu

---

C59 **Effect of purinergic and cholinergic costimulation on rat airway contractility**  
15.30  
Etienne Roux

---

C60 **Rho-associated kinase-mediated modulation of Ca<sup>2+</sup> signaling, myosin and MYPT1 phosphorylation, and force induced by membrane depolarization and carbachol of rat ureteric smooth muscle**  
15.45  
Ludmila Borisova

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# Oral Communications

## Epithelia & Membrane Transport

Wednesday 13 July 2011

*LT5 (Lecture theatre Le Gros Clark)*

The names below are the presenting authors, for a full list of authors see the abstract

- 
- C61 **Ca<sup>2+</sup>-activated Cl<sup>-</sup> channel expression and currents are upregulated by epidermal growth factor receptor activation in colonic epithelial cells**  
14.30 Magdalena Mroz
- 
- C62 **Location of the ATP-dependent gate in the cystic fibrosis transmembrane conductance regulator channel pore**  
14.45 Paul Lindsay
- 
- C63 **Thermodynamic mutant cycles suggest no interface separation during channel gating at CFTR's non-canonical ATP binding site**  
15.00 Paola Vergani
- 
- C64 **Membrane expression of deltaF508 mutant increases epithelial HCO<sub>3</sub><sup>-</sup> secretion via functional Cl<sup>-</sup>/HCO<sub>3</sub><sup>-</sup> exchanger(s)**  
15.15 Fang Xiao
- 
- C65 **Disruption of clc-5 leads to a redistribution of annexin A2 in cells of the collecting duct and distal convoluted tubule of a Dent's disease mouse model**  
15.30 Georgina Carr
- 
- C66 **Direct G protein modulation of K<sub>2p</sub> channel TASK-2: a role for basic residues in the C-terminus domain**  
15.45 Francisco Sepúlveda
- 

Today's Epithelia & Membrane Transport Poster Communications will be held in the Marquee behind University Club from 16.00, see page 75

For details of the Lecture Theatres, see page 8

# Oral Communications

## Cellular & Integrative Neuroscience

Wednesday 13 July 2011

### LT6 (Experimental Psychology B)

The names below are the presenting authors, for a full list of authors see the abstract

---

C67 **Ipsilateral corticospinal contributions to control of the forelimb in monkey**  
14.30 Demetris Soteropoulos

---

C68 **Oscillatory corticomuscular coupling during isometric voluntary contraction influences reaction time in humans**  
14.45 Junichi Ushiyama

---

C69 **Extracellular spike duration in macaque motor cortex pyramidal neurons is correlated with axonal conduction velocity**  
15.00 Ganesh Vigneswaran

---

C70 **Effects of Area 3a stimulation on muscle activity in the awake monkey**  
15.15 Claire Witham

---

C71 **On the origin of sense of force and weight**  
15.30 Richard Fitzpatrick

---

C72 **Do muscle afferents contribute to the sense of body ownership?**  
15.45 Simon Gandevia

---

# Poster Communications

## Cardiac & Respiratory Physiology

Wednesday 13 July 2011

### *Marquee behind University Club*

The names below are the presenting authors, for a full list of authors see the abstract

---

PC122 **Insufficient GABA transmission in the Kölliker-Fuse nucleus underlies respiratory irregularity in a mouse model of Rett syndrome**  
Ana Abdala

---

PC123 **Sympathetic hyperinnervation induced by chronic hypoxia in utero (CHU) persists into early adulthood**  
William Rook

---

PC124 **The effects of the diving reflex on cerebral blood flow whilst supine with and without mild heat stress: A pilot study.**  
Blake Perry

---

PC125 **Age-dependent effects on atrial arrhythmogenicity in Scn5a+/- murine hearts**  
Laila Guzadhur

---

PC126 **A comparison between standard and dynamic electrical restitution in single cells**  
Kieran Brack

---

PC127 **Structured culture scaffolds force the maturation of calcium transients in rat neonatal ventricular myocytes**  
Christopher Rao

---

PC128 **Increase in atrial arrhythmic susceptibility with age in mice with atrial-specific MKK4 deletion**  
Laura Davies

---

Continued on the next page

- 
- PC129 **Structural and functional remodelling both contribute to arrhythmia substrate in computational models of right heart failure**  
Alan Benson
- 
- PC130 **Depressed TS-evoked glutamatergic transmission on NTS neurons of CIH rats is due to reduced number of functional synapses**  
Carlos Eduardo Almado
- 
- PC131 **Angiotensin-II-dependent renovascular hypertension and cardiac dysfunction are improved by regular swimming exercise: role of the oxidant-antioxidant balance**  
Zarife Özdemir
- 
- PC132 **Is cerebral blood flow a determinant of a long term arterial pressure set-point in the rat?**  
Julian Paton
- 
- PC133 **Reduction in blood flow to a localized region of the dorsomedial medulla triggers hypertension in rats**  
Julian Paton
- 
- PC134 **Electrical restitution in single cells - effects of acetylcholine and nitric oxide donors**  
Rikesh Patel
- 
- PC135 **Right atrioventricular ring tissue in human embryonic hearts – what can be learnt from histological and immunohistochemical investigation?**  
Hira Azhar
- 
- PC136 **Effects of exercise training in intraplatelet L-arginine-NO pathway and platelet aggregation in rats with myocardial infarction**  
Tatiana Brunini
- 
- PC137 **The time-of-day variation in the response of ventricular myocytes to isoproterenol is lost in spontaneously hypertensive rats**  
Glenn Rodrigo
-



- 
- PC138 **Ischaemic preconditioning and remote ischaemic preconditioning modulate pre-ischaemic Ca<sup>2+</sup> homeostasis in rat ventricular myocytes**  
Helen Turrell
- 
- PC139 **Computer model of the rat ventricular myocyte with different I<sub>Ca</sub> inactivation at the peripheral and t-tubule membranes**  
Michal Pásek
- 
- PC140 **M cells in humans: Action potential modelling and impact on APD distribution in cardiac tissue**  
Sanjay Kharche
- 
- PC141 **The Involvement of Adenosine and Opioids in Remote Ischaemic Pre- and Postconditioning protection of isolated rat ventricular myocytes**  
Ravi Ghelani
- 
- PC142 **Conditioning of rat ventricular myocytes by serum from remotely conditioned healthy human subjects and rat hearts.**  
Sadat Edroos
- 
- PC143 **Impact of age on structural remodelling in the spontaneously diabetic Goto Kakizaki rat**  
Jaipaul Singh
- 
- PC144 **Carbonic anhydrase activity in rat cardiac myocytes is extra-mitochondrial**  
Mohammad Ali
- 
- PC145 **Changes of SERCA activity have proportionately smaller effects on sarcoplasmic reticulum calcium content**  
Elizabeth Bode
- 
- PC146 **Carbonylation contributes to RyR2 dysregulation and dyssynchronous sarcoplasmic reticulum Ca<sup>2+</sup> release in a rat model of type 1 diabetes mellitus**  
Jaipaul Singh
- 
- PC147 **Concurrent optical mapping of voltage and calcium in rat isolated hearts using one camera**  
Christian Bollensdorff
- 

Continued on the next page

Find out about the next [Cardiac & Respiratory Physiology](#) meeting on page 132

For details of the Lecture Theatres, see page 8

- 
- PC148 **Acute caloric restriction reduces free radical damage in heart, reperfusion arrhythmias and myocardial infarction size in rats**  
Michal Snorek
- 
- PC149 **Changes of action potential duration and intracellular calcium following a change of pacing frequency in sheep ventricular myocytes**  
David Greensmith
- 
- PC150 **Measurement of myocardial sarcoplasmic resistivity by dielectrophoresis and impedance analysis**  
Alessandra Manazza
- 
- PC151 **Spontaneous differentiation of embryonic stem cells leads to line-dependent functional diversity of cardiac myocytes**  
Tobias Hannes
- 
- PC152 **Caveolae Limit  $\beta 2$  Adrenoceptor-derived cAMP Signals in the Adult Cardiac Myocyte**  
David MacDougall
- 
- PC153 **Ageing produces a distinct molecular fingerprint in the failing ovine ventricular myocardium**  
Jessica Caldwell
- 
- PC154 **Functional roles of neuronal nitric oxide synthase in NADPH oxidase activity and contraction in angiotensin II-treated rat ventricular myocytes**  
Ji Hyun Chung
- 
- PC155 **Pathological transmural electrophysiological heterogeneity investigated by dual wavelength optical mapping**  
T Alexander Quinn
- 
- PC156 **Clinical evidence of spatial heterogeneity in heart rate adaptation and associated arrhythmic risk in the human ventricles**  
Alfonso Bueno-Orovio
- 
- PC157 **Excitatory and inhibitory control of L-type  $Ca^{2+}$  current by pH in ventricular myocytes**  
Richard Vaughan-Jones
-

- 
- PC158 **A novel method to localize subcellular Ca<sup>2+</sup> release using 3-D distance mapping**  
Eef Dries
- 
- PC159 **Conduction velocity changes contribute to arrhythmogenicity in a murine model of catecholaminergic polymorphic ventricular tachycardia, RyR2-P2328S**  
James Fraser
- 
- PC160 **Electrical remodeling of potassium currents in right atrial myocytes from sheep persistent atrial fibrillation model.**  
Nicolas Doisne
- 
- PC161 **Effects of detubulation on excitation-contraction coupling in sheep atrial myocytes.**  
Mark Richards
- 
- PC162 **Two pathways to sinoatrial node dysfunction in heart failure**  
Joseph Yanni
- 
- PC163 **How does ageing modulate intracellular Ca homeostasis in the sheep atria?**  
Katharine Dibb
-

# Poster Communications

## Cellular & Integrative Neuroscience

Wednesday 13 July 2011

### *Marquee behind University Club*

The names below are the presenting authors, for a full list of authors see the abstract

---

PC164 **Gene expression in glycyl tRNA synthetase (GARS) related neurodegeneration**  
Jinghuan Li

---

PC165 **Development of physiologically correct neural inputs for an *in vitro* model of skeletal muscle.**  
Alec Smith

---

PC166 **Melatonin inhibits membrane depolarisation-induced calcium signals in cultured rat trigeminal ganglion neurons**  
Damlagul Aydin

---

PC167 **Dynamics of CA1 and subicular neurone firing during theta and slow-wave rhythm transitions in the anaesthetized rat**  
Daniel Squirrell

---

PC168 **Distributed control strategies for conductance regulation in dendrites**  
Timothy O'Leary

---

PC169 **Establishment of a motoneuron-myotube co-culture in a 3D fibrin gel model of skeletal muscle**  
Samantha Passey

---

PC170 **The endogenous salivary peptide opiorphin inhibits Ca<sup>2+</sup> signalling in rat primary sensory neurones**  
Ahmet Ayar

---

PC171 **Intravital two-photon imaging of mice infected with *Trypanosoma brucei* shows parasites moving in the subarachnoid space and brain perivascular spaces**  
Jonathan Coles

---

Find out about the new Editor-in-Chief's plans for neuroscience in *The Journal of Physiology* on page 123

- 
- PC172 **Targeted neuronal nitric oxide synthase transgene delivery into cardiac sympathetic neurons reverses abnormal calcium handling in prehypertensive spontaneously hypertensive rats**  
Dan Li
- 
- PC173 **Cellular mechanism(s) of action of a water soluble extract of *M. Charantia* in inducing cell death on different cancer cell lines**  
Gunasekar Manoharan
- 
- PC174 **Leptin activates intracellular calcium signals in isolated rat dorsal root ganglion neurons**  
Metec Ozcan
- 
- PC175 **Kainate-evoked glutamate secretion is reduced by ethanol in rat hippocampal astrocytes**  
Patricia Santofimia-Castaño
- 
- PC176 **Activation of enteric glia during the colonic migrating motor complex (CMMC) in mice**  
Matthew Broadhead
- 
- PC177 **Some observations on the innervation of the female rat anal sphincters**  
James Jones
- 
- PC178 **A murine model of slow transit constipation induced by outlet obstruction.**  
Dante Heredia
- 
- PC179 **Calcium activity in submucosal neurons during the colonic migrating motor complex (CMMC) in the isolated murine large intestine**  
Takanobu Okamoto
- 
- PC180 **The rapid neural response to slow platform tilts in standing man**  
Tim Osborne
- 
- PC181 **Selective inhibition of GluN2A-containing NMDARs by an antagonist acting at the GluN1 subunit**  
David Wyllie
- 

Continued on the next page

Find out about the new Editor-in-Chief's plans for neuroscience in *The Journal of Physiology* on page 123

For details of the Lecture Theatres, see page 8

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PC182 **The activation mechanism of rat  $\alpha 3$  homomeric Glycine receptors**  
Alessandro Marabelli

---

PC183 **Structural re-arrangement of the BK channel RCK1-RCK2 linker investigated using fluorescence lifetime imaging microscopy**  
Iain Rowe

---

PC184 **Recovery of precise upper limb force production enables better hand position control early after a stroke**  
Duncan Turner

---



Find out about the new Editor-in-Chief's plans for neuroscience in *The Journal of Physiology* on page 123

# Poster Communications

## Epithelia & Membrane Transport

Wednesday 13 July 2011

### *Marquee behind University Club*

The names below are the presenting authors, for a full list of authors see the abstract

---

PC185 **Effects of End Stage Chronic Renal Failure on L-arginine-nitric oxide pathway and urea cycle in red blood cells**  
Monique Moss

---

PC186 **The lipoxin A4 increases ASL height in normal and cystic fibrosis bronchial epithelium.**  
Gerrard Higgins

---

PC187 **Secretion by the human airway epithelial cell line Calu-3 depends on basolateral chloride loading by AE2**  
John Hanrahan

---

PC188 **Cyclic AMP-induced phosphorylation of endogenous Nedd-4/2 and surface abundance of epithelial channel subunits ( $\alpha$ -,  $\beta$ - and  $\gamma$ -ENaC) in H441 human airway epithelial cells**  
Noor Ismail

---

PC189 **The dual role of  $\text{CO}_2/\text{HCO}_3^-$  buffer in the regulation of intracellular pH of three-dimensional, multi-cellular tumour growths**  
Pawel Swietach

---

PC190 **Orai3 contributes to breast cancer development through c-Myc oncogene pathway activation**  
Malika Faouzi

---

PC191 **Oxygen dependence of membrane transport in red blood cells from HbSC sickle cell patients**  
Anke Hannemann

---

Continued on the next page

Find out about the next [Epithelia & Membrane Transport](#) meeting on page 128

For details of the Lecture Theatres, see page 8

**EM**

- 
- PC192 **Deoxygenation-induced phosphatidylserine exposure in human red blood cells from sickle cell patients**  
Urszula Cytlak
- 
- PC193 **Role of basolateral Cl<sup>-</sup>-HCO<sub>3</sub><sup>-</sup> exchange in HCO<sub>3</sub><sup>-</sup> secretion in a computational model of electrolyte transport by pancreatic duct epithelium**  
Makoto Yamaguchi
- 
- PC194 **Deoxygenation-induced Mg<sup>2+</sup> currents in red blood cells from sickle cell patients**  
Yu-Ling Ma
- 
- PC195 **The mucosal glucose concentration of polarised human airway epithelial cell monolayers affects luminal *Staphylococcus aureus* growth**  
James Garnett
- 
- PC196 **The natural antioxidant cinnamtannin B-1 reduces the effects of H<sub>2</sub>O<sub>2</sub> on CCK-8-evoked responses in mouse pancreatic acinar cells**  
Gines Salido
- 
- PC197 **Prolyl hydroxylases regulate electrogenic sodium absorption across colonic epithelium**  
Joseph Ward
- 
- PC198 **The nuclear bile acid receptor, farnesoid X receptor, inhibits CFTR expression and Cl<sup>-</sup> secretion in colonic epithelial cells**  
Magdalena Mroz
-



# Poster Communications

## Human & Exercise Physiology

Wednesday 13 July 2011

### *Marquee behind University Club*

The names below are the presenting authors, for a full list of authors see the abstract

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PC199 **The effect of an exercise ball on trunk muscle responses to rapid limb movement**  
Isaac Sorinola

---

PC200 **An exercise test to characterise the domains of aerobic function in humans**  
Scott Murgatroyd

---

PC201 **The influence of bradykinin receptor B2 genetic variation on voluntary fluid intake and fluid balance**  
Adora Yau

---

PC202 **Diurnal variation in the circulatory changes associated with initial orthostatic hypotension during active standing: sleep vs. circadian influences**  
Nia Lewis

---

PC203 **Loss of skeletal muscle power in older men is due to loss of muscle mass, specific force and velocity of contraction**  
Jamie McPhee

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PC204 **Effect of exercise induced Stress on leukocyte Hsp72, GRP78, Hsp90 $\alpha$  and GRP94 mRNA expression**  
James Tuttle

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PC205 **Muscle to Bone ratio as an intra-individual indicator of sarcopaenia**  
Thomas Maden-Wilkinson

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Continued on the next page

- 
- PC206 **Neurocognitive function across the spectrum of high contact sports**  
Danielle Hodson
- 
- PC207 **Inverse relationship between blood-borne and expired nitric oxide during exercise: An interpretative dilemma?**  
Kevin Evans
- 
- PC208 **Similar cardiovascular and metabolic adaptations to exercise training in older men and women with type 2 diabetes**  
Eamonn O'Connor
- 
- PC209 **Effects of intense exercise on muscle and cerebral oxygenation during acute hypoxia**  
Whitney Duff
- 
- PC210 **Resistance exercise training improves microvascular blood volume in response to feeding**  
Bethan Phillips
- 
- PC211 **Sarcopenic muscle shows distinct sex differences at the transcriptional level**  
Carolyn Greig
- 
- PC212 **Whole body vibration and antioxidant activity**  
Sally Lark
- 
- PC213 **Neurovascular coupling and distribution of cerebral blood flow during exercise**  
Christopher Willie
- 
- PC214 **Changes in erythropoietin concentration induced by acute hypoxia do not predict acute hypoxic ventilatory response or performance changes following living high – training low**  
Julien Brugniaux
- 
- PC215 **Cerebral oxygen vasoreactivity after lipopolysaccharide infusion in healthy humans**  
Ronan Berg
- 
- PC216 **Exercising arterial oxygenation oxidative stress and NO: Impact on the regulation of blood coagulation in man**  
Karl New
-

# Poster Communications

## Metabolism & Endocrinology

Wednesday 13 July 2011

### *Marquee behind University Club*

The names below are the presenting authors, for a full list of authors see the abstract

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PC217 **A conserved tryptophan at the membrane-water interface acts as a gatekeeper for Kir6.2/SUR1 channels and causes neonatal diabetes when mutated**  
Frances Ashcroft

---

PC218 **Involvement of STIM and ORAI in the Differentiation of Human Preadipocytes**  
Olusola Ayoola

---

PC219 **Metabolomics by NMR of mice blood and urine after an exhaustive exercise at individual oxidative velocity**  
Laurence Le Moyec

---

PC220 **Effect of hyperglycemia on perineal musculature in erectile dysfunction on streptozotocine-induced long term diabetic male rat**  
Sekar Suresh

---

PC221 **Effects of the CB1 cannabinoid receptor on fluid intake and hormone secretion induced by water restriction**  
Silvia Ruginsk

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PC222 **The beneficial effect of GLP-1 treatment in type 1 diabetic rats**  
Ernest Adeghate

---

PC223 **Chronic exercise in the absence of ovarian hormones enhances stress-induced gastric and colonic oxidative damage by a glucocorticoid receptor-dependent mechanism**  
Gülsün Memi

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Continued on the next page

Find out about the next [Metabolism & Endocrinology](#) meeting on page 132

For details of the Lecture Theatres, see page 8

**ME**

Poster Communications

- 
- PC224 **Effects of chronic insulin and saturated fatty acid exposure on mitochondrial function in cultured myocytes**  
Silvia Mora
- 
- PC225 **Low-sodium diet induces endocrine and hydroelectrolytic changes in male rats**  
Andre Mecawi
- 
- PC226 **HIF-1 $\alpha$  mediates prostate hyperplasia under chronic inflammation**  
Hye-Jin Kim
-

# Poster Communications

## Vascular & Smooth Muscle Physiology

Wednesday 13 July 2011

### *Marquee behind University Club*

The names below are the presenting authors, for a full list of authors see the abstract

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PC227 **Reactive oxygen species (ROS) from cytochrome P450 2C9 mediate Ca<sup>2+</sup> release from endothelial stores during endothelial derived hyperpolarising factor (EDHF) responses**  
James Chidgey

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PC228 **Influence of hyperbaric oxygen treatment on cerebral resistance vessels reactivity in diabetic rats**  
Sanela Unfirer

---

PC229 **Effects of hyperbaric oxygen therapy on reactivity of rat aortic rings to angiotensin II and angiotensin-(1-7)**  
Aleksandar Kibel

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PC230 **Leucocyte infiltration in experimental warm hepatic ischemia reperfusion model; effect of ischemic pre and post conditioning strategies and implications of adhesion molecules**  
Zienab Alrefaie

---

PC231 **SRPK1 inhibition significantly reduces laser-induced choroidal neovascularisation (CNV) and intravitreal neovascularisation (IVNV) in an Oxygen Induced Retinopathy (OIR) model of Retinopathy of Prematurity (ROP) in rats**  
Melissa Gammons

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PC233 **The investigation of a role for TRPV1 at a remote site in sepsis**  
Moji Musa

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Continued on the next page

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- PC234 **Sphingosine 1-phosphate inhibits angiogenesis in human arteries**  
Keith Mascal
- 
- PC235 **Quantification of tumour cell adhesion on endothelial cell monolayers**  
Ammara Abdullah
- 
- PC236 **Mechanisms of glutamatergic regulation of capillary diameter by pericytes**  
Clare Reynell
- 
- PC237 ***In vitro* effect of apelin on spontaneous contractions in the rat myometrium**  
Selim Kutlu
- 
- PC238 **Blood pressure increased dramatically in hypertensive rats after left hemisphere lesions with 6-OHDA**  
Inmaculada Banegas
- 
- PC239 **Effect of  $K_v7$  activators on chorionic plate arterial tone: A functional role for  $K_v7$  channels in the human placental vasculature?**  
Tracey Mills
- 
- PC240 **Insulin reverses the  $H_2O_2$ -induced vasoconstriction in human feto-placental microcirculation**  
Marcelo Gonzalez
- 
- PC241 **Dynamics of ovarian follicular development and atresia are regulated by the balance of pro- and anti-angiogenic isoforms of vascular endothelial growth factor (VEGF)**  
Jennifer Castle-Miller
- 
- PC242 **Role of tyrosine kinases activity in vasodilator mechanisms induced by insulin in human fetal vein.**  
Lissette Cabrera
-

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PC243 **Vascular Endothelial Growth Factor-A (VEGF-A) overexpression in adult mouse glomeruli increases glomerular ultrafiltration coefficient due partly to the reduced coverage of the capillaries by the subpodocyte space (SPS)**  
Christopher Neal

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PC244 **Effects of high glucose and insulin on vasorelaxation to anandamide**  
Vanessa Ho

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PC245 **Functional role of Kv7.1 channels in rat mesenteric artery**  
Preet Chadha

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PC246 **The effects of zinc deficiency on vascular smooth muscle cell function**  
Keith Allen-Redpath

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# Annual General Meeting 2011

Wednesday 13 July 2011

*LT1 (University Museum of Natural History)*

**Ordinary and Honorary Members have the right to attend and vote at the Annual General Meeting. Affiliates have the right to attend but may not vote.**

As well as the formal business, time has been allowed for Members to raise any matter for discussion. The Executive Committee, the Editors-in-Chief of both Journals and The Society's Chief Executive will be in attendance.

Members were invited to submit questions in advance, in order to ensure that such matters are addressed appropriately. However, it is not a requirement and Members remain free to raise any matter they wish during the AGM itself, although items that have been pre-notified will receive preference if time constraints restrict the number of items that can be discussed.