PHYSIOLOGY 2019
Your Annual Conference

The Physiological Society

8-10 July 2019
Aberdeen Exhibition and Conference Centre, UK

1495 UNIVERSITY OF ABERDEEN

WHERE GREAT MINDS WORK

TOGETHER

Top 5 in the UK

Anatomy and Physiology

Guardian League Tables 2019

Aberdeen has a long and distinguished history in the field of physiology including a Nobel Prize awarded to Professor JJR Macleod (Regius Professor of Physiology) for his work on insulin.

Our current cutting-edge physiology research includes:

- Researching links between Alzheimer's disease and diabetes
- Identifying new targets for obesity and type 2 diabetes medication
- Investigating the role of the immune system in metabolic disease
- Developing new strategies to repair injured nerves

The University of Aberdeen is delighted to be part of Physiology 2019 and continuing to support the work of The Physiological Society.

www.abdn.ac.uk/smmsn

THE TIMES THE SUNDAY TIMES GOOD UNIVERSITY GUIDE 2019

SCOTTISH UNIVERSITY OF THE YEAR

Dear Members and Colleagues,

Five satellite meetings, 18 symposia, 7 Prize lectures, 429 posters, 126 oral communications and the Rob Clarke awards as a platform for early career researchers – what is there not to like?

A jamboree of the strength, breadth and diversity of Physiology.

After nearly 20 years, The Physiological Society's annual conference is returning to Aberdeen.

On behalf of The Society and its Trustees, I'm delighted you chose to join your hundreds of colleagues in what will be a high-profile scientific event that offers networking opportunities, supported by an imaginative social programme, and all in a rich historical environment.

See you at the posters and the ceilidh!

Bridget Lumb

President, The Physiological Society

As the local organising committee, it is our great pleasure to welcome The Physiological Society back to Aberdeen, after an absence of nearly 20 years.

A lot has changed since 2000, but not the friendly Scottish welcome. The changes include moving the meeting to a conference venue, the AECC, to accommodate the greatly increased membership of The Society, and the building of world-class research institutes, an award-winning library and an Olympic-grade sport and aquatic campus at the University of Aberdeen, plus the moving of Robert Gordon University to a stunningly attractive new campus at Garthdee. We hope you will take the time to visit these and many other attractions of Aberdeen's two Universities.

The science on offer is an eclectic mix of all branches of physiology, across seven prize lectures, five satellite symposia, 18 meeting symposia, 128 oral communications and over 300 posters. So, there is plenty to sate anyone's appetite for knowledge. There are also career development and networking opportunities galore, plus a lively social programme – don't miss out on the ceilidh at the Beach Ballroom, with its magnificent sprung floor and superb seaviews.

We would like to thank all those who have worked so hard to ensure the success of the meeting. The Conference Committee had the very difficult task of deciding between the enormous number of submitted symposia. Many colleagues helped with the selection of abstracts for oral presentation. Last, but most certainly not least, the organization would not have been possible without the tireless efforts and professional skills of the staff of The Physiological Society. We believe that all attendees will find much to excite and interest them in the programme.

We also hope that you will find some time to appreciate the tourist attractions of Aberdeen and Aberdeenshire, from fine dining to University of Aberdeen's medieval core, from dolphin and seal watching, to innumerable castles, 4,000 year old Neolithic stone circles and pictish stones, or perhaps sample the ever popular whisky trail.

Whatever your interests, please enjoy Physiology 2019 … and haste ye back.

With best wishes,

Guy Bewick, University of Aberdeen, UK
Derek Scott, University of Aberdeen, UK

Member

Join our network of physiologists today!

Enhance your career
Receive funding for travel, research and teaching

Expand your network
Meet leading physiologists and present your research at our world class conferences

Boost your CV
Enjoy a range of development and training workshops

Keep up with cutting edge research
Free access to *The Journal of Physiology*, *Experimental Physiology* and *Physiological Reports*

The Physiological Society

Someone from the Physiology 2019 conference team can always be found at the registration desk. We will be happy to help with any queries you may have but you might be able to find an answer to your question on these pages.

Registration

This will be open on the ground floor at the following times:

Monday, 8 July	07:00 – 19:30
Tuesday, 9 July	07:00 – 18:30
Wednesday, 10 July	08:00 – 15:00

Luggage storage and cloakroom

There is a cloakrooom and luggage storage, please ask at the registration desk.

Abstracts

Speaker, oral and poster abstracts are available either online via the event website, or the itinerary planner, or mobile app linked from the website, www.physoc.org/physiology2019

Poster Sessions

All posters will be displayed in the Main Arena of the AECC.

Posters may be affixed from 07:00 onwards.

The formal presentation times (when posters must be accompanied by the presenting author) are detailed below, however, the earlier they are affixed to the boards; the more time people will have to view them.

All posters must be removed at the end of the conference and taken with you. Posters left after this will be removed and the organisers take no responsibility for any subsequent damage or loss of property left behind.

There are TWO dedicated poster sessions scheduled as follows:

POSTER SESSION A – ODD NUMBERS

Monday, 8 July 16:00 – 17:45

POSTER SESSION B – EVEN NUMBERS

Tuesday, 9 July 16:00 – 17:45

Your poster number was sent in an email together with your final ID number. Should you need any clarification, please consult the itinerary planner, or mobile app on the website, or visit the registration desk. It is the presenting author's responsibility to be aware of their scheduled poster session.

Please note that abstracts NOT presented in person will not form part of the final online published proceedings

Late breaking abstracts

All late breaking abstracts are scheduled for presentation during the poster sessions detailed above.

Late breaking abstracts are accepted as title only and are listed as part of a programme addendum and will NOT form part of the final online published proceedings.

Poster help desk

Velcro will be available on all boards, and if you need more, please visit the registration desk. No other fixings may be used.

Internet access

There is free Wi-Fi available and please use the AECC network.

Username: show
Password: 67uytreg

Prayer room
Please ask at the registration desk and they can direct you to the appropriate room.

Quiet space
Conferences and networking can be intense, if you need a quiet space to take some time out and gather your thoughts, please ask the registration desk.

In case of emergency
Someone from the Physiology 2019 team (registration area) will be your first point of contact in any emergency. They will help you or find the person who can.

Mobile phones
Don't forget to turn your mobile or cell to silent during all sessions of Physiology 2019.

Video or audio recording of presentations
Attendees are reminded that the video and audio recording of ANY session or presentation using mobile devices or any such recording equipment is strictly prohibited.

Arriving late to sessions
We know it is not always possible to get to sessions on time but we do ask that if you are running late, to take your seat quietly.

Smoking
You can't smoke inside. If you wish to smoke then you need to go outside.

Food and drink
Tea and coffee during scheduled breaks, lunch, and all refreshments during the poster sessions are included in your registration.

Certificate of attendance

After Physiology 2019, we will send you an electronic certificate.

Changes to abstracts

We cannot make changes to abstracts.

Twitter

The official Twitter hashtag is **#physiology2019**

Feedback

We want you to enjoy this conference but are always happy to hear how we can improve. You can speak to a member of the team, or fill in your comments anonymously in a feedback questionnaire that will be emailed to you after the conference.

Photographer

Photographs are being taken at this conference. They may be published on our website and social media channels to promote The Society. Please see our Fair Processing Notice for further details at www.physoc.org/privacy

If you do not wish to be included in any of these photographs, please let the staff at the registration desk know.

EUAN MACDONALD CENTRE

Vital research into motor neurone disease

THE UNIVERSITY of EDINBURGH

We are a Scotland-wide network for basic and clinical research into motor neurone diseases.

Interested? Please get in touch.

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www.euanmacdonaldcentre.org

The University of Edinburgh is a charitable body, registered in Scotland, with registration number SC005336

EUROPHYSIOLOGY 2020

A partnership between the Physiological Society, the Scandinavian Physiological Society, the German Physiological Society and the Federation of European Physiological Societies

SAVE THE DATE

11-13 September 2020 **Berlin**

www.europhysiology2020.org

Museums

Aberdeen Maritime Museum

Modern, award winning. Here in the Oil Capital of Europe, this is the only UK display of the North Sea oil & gas industry, plus Aberdeen's maritime history. Views over the busy harbour. Incorporate Provost Ross's House (built 1593 AD).

http://www.aagm.co.uk/Visit/amm-overview.aspx

Historic Things to See

King's College & Chapel

Built to house original Aberdeen University, founded 1496. Chapel built 1498, Cromwell Tower 1650s, many other medieval and historic buildings on High Street, the Spittal and College Bounds.

https://www.visitscotland.com/info/see-do/kings-college-chapel-p1418401

Marischal College

Founded 1593, current building built 1830s. World's second largest granite building. Recently restored and leased to City Council. Particularly magnificent when floodlit.

https://www.abdn.ac.uk/about/campus/marischal-college-394.php

Sir Duncan Rice Library

Award-winning, iconic, modern information hub, with café. Interesting public displays & special collections.

https://www.designbuild-network.com/projects/sir-duncan-rice-library-aberdeen-scotland/

St Machar's Cathedral

Began 1165 AD, 1328 AD restoration into a fortified 'Kirk'. 1530 AD panelled oak ceiling with 48 heraldic shields complete.

http://www.stmachar.com/buildinghistory.htm

'Fittie' (Footdee)

Historic, picturesque small fishing village at mouth of Dee harbour. Series of pretty connecting village squares, with easy access to the long, sandy beach and Esplanade.

https://aboutaberdeen.com/Footdee-Fittie-Aberdeen

Wildlife

Donmouth Nature Reserve

Walking distance from conference venue (AECC). Sandy beach & sandspit where seals haul out, awaiting the incoming salmon common in this river. Southern extremity of Balmedie Nature Reserve.
https://www.visitabdn.com/listing/donmouth-local-nature-reserve

Dolphins in Dee Harbour

Aberdeen is one of the best places in Europe to see bottle-nosed dolphins. Join the Dolphinwatch team at Torry Battery, Thursday-Sunday, 11am-5pm (weather permitting) from April 11 – August 18 2019. They provide binoculars, spotting scopes and lots of information about the dolphins
https://www.rspb.org.uk/get-involved/activities/dolphinwatch/

Snacks & Cafes

Books & Beans

Secondhand bookshop with excellent selection of daytime food & hot drinks. Browse while you eat.
http://www.booksandbeans.co.uk/

Foodstory

'Zero waste café'. Vegan/vegetarian, wholefood, hipster vibe.
http://foodstorycafe.co.uk/

Mackie 19.2

New ice cream parlour. Local company. Wide range of ice-creams, teas & coffees. Marischal Square Shopping Centre, with a striking giant leopard statue by Andy Scott. Statue is 5m high, perched on 10m pole, & weighs 2 tonnes.
https://www.mackies.co.uk/where-to-buy-article/where-to-buy-ice-cream/ice-cream-parlour.html

Pub Food

Prince of Wales

Popular, friendly, pubgrub, huge portions, longest bar in Aberdeen, wide selection of beers & ales.
https://www.belhavenpubs.co.uk/pubs/aberdeenshire/prince-of-wales

Restaurants

Silver Darling

Restaurant of the year (casual dining) 2018. Dining with a seaview. Local produce.
https://www.thesilverdarling.co.uk/

Moonfish

High quality food, small place & popular. Well worth visiting if you can get in.
http://www.moonfishcafe.co.uk/.

Yatai Izakaya

Food and cocktail bar. Japanese.
https://www.yatai.co.uk/

Bar Ninety Nine

Music, liquor, food & fun.
http://99aberdeen.com/

Professional **development opportunities**

In addition to an exciting and diverse scientific programme, this conference offers a variety of professional development sessions to help advance your career.

Enhance your paper-writing skills

Publishing for beginners, in association with *The Journal of Physiology* and *Experimental Physiology*

Monday 8 July, 13.15–14.15
Crombie A Suite

What's statistics good for?

Tuesday 9 July, 13.15–14.15
Crombie B Suite

Support your colleagues

LGBT and The Society: Promoting inclusivity

Tuesday 9 July, 13.15–14.15
Crombie A Suite

Explore ways we can ensure that The Society and its activities are inclusive for all.

Rob Clarke Awards 2019: Poster judging

Tuesday 9 July, 13.15–14.30
Main Arena

Support the next generation of physiologists by viewing the Rob Clarke Awards posters.

Rob Clarke Awards 2019: Awards ceremony

Tuesday 9 July, 16.45–17.00
Main Arena

Develop your teaching

Lt: An online platform for physiology teaching, laboratories and assessment

Monday 8 July, 13.15–14.15
Balmoral Suite

In association with:

ADInstruments
making science easier

Teaching Physiology: How to configure your lab with engaging lessons, metabolic activity, and biopotential measurements

Tuesday 9 July, 13.15–14.15
Balmoral Suite

In association with:

BIOPAC Systems UK

Enhance your impact

Demonstrating real-world impact in grant applications

Monday 8 July, 13.15–14.15
Crombie B Suite

What are funders looking for in grant applications? Hear from BBSRC and Wellcome Trust, and discuss successful examples.

Animals and Openness: A researcher's guide to transparency around animal research

Tuesday 9 July, 13.15–14.15
Gordon B Suite

Explore some of the questions asked by the public about using animals in research, and learn techniques for answering those questions authoritatively and openly.

Are you an early career researcher?

Pitch your research idea for funding to our panel of senior journal editors in less than 60 seconds! **The most convincing entrant will win £1,000 to help them kick-start their project.** Enter at The Society's stand.

In association with: WILEY

Submit your research

The Journal of Physiology

Here's why you should publish in *The Journal of Physiology*...

The Journal of Physiology publishes important advances in our knowledge of physiology that increase our understanding of how our bodies function in health and disease.

- **Free to publish** – no submission fees
- **No page or figure limits** – no restrictions on page length or the number of tables and figures
- **Expert and comprehensive review** – two reviewer reports and first decision in less than five weeks
- **Rapid publication** – articles published online within days of acceptance
- **Open Access option available** – compliant with all major funders' policies
- **Excellent visibility** – the most highly cited Physiology journal (>48,000 total cites in 2017)
- **Be amongst the most trusted research** – cited half-life of over 10 years – the highest in Physiology
- **Prestigious history** – authors include over 40 Nobel Prize winners
- **Outstanding author services** – pre-submission queries welcome
- **Prior publication on preprint servers allowed**

2017 Two-year Impact Factor: 4.540

Submit your research: jp.physoc.org

jp.physoc.org

jphysiol@physoc.org

@JPhysiol

/journalofphysiology

bit.ly/JPhysiolLinkedIn

The Physiological Society

WILEY

Monday 8 July

09:00 Otto Hutter Prize Lecture
The perils and pleasures of educating 21st century physiology undergraduates
Julia Choate, Monash University, Australia — Boyd Suite

10:00 Symposia
Cardiovascular implications of air pollution — Gordon A Suite
Novel approaches to physiology practical teaching — Boyd Suite
Pain: Nociception to perception — Fleming Auditorium

10:00 Oral Communications
Human & Exercise Physiology A — Gordon B Suite
Metabolism & Endocrinology A — Crombie A Suite
Epithelia & Membrane Transport A — Crombie B Suite
Vascular & Smooth Muscle Physiology A — The Balmoral Suite

11:30 Refreshment break — **Main Arena**

12:00 The Paton Prize Lecture
Extremes: Life, death and the limits of the human body
Kevin Fong, University College London, UK — Boyd Suite

13:00 Lunch — **Main Arena**

13:15 - 14:15 Professional development sessions
CV review session — Main Arena
Publishing for beginners — Crombie A Suite
Lt: an online platform for Physiology teaching, laboratories and assessment — Balmoral Suite
Demonstrating real-world impact in grant applications — Crombie B Suite

14:30 Symposia
Exercise in people with pulmonary hypertension — Fleming Auditorium
Free radicals as double-edged modulators of skeletal muscle function — Boyd Suite
A nasty case of the vapours - E-cigarettes friend or foe? — Gordon A Suite

14:30 Oral Communications
Cardiac & Respiratory Physiology A — Crombie B Suite
Education & Teaching A — Balmoral Suite
Neuroscience A — Crombie A Suite

16:00 Poster Session A — **Main Arena**

18:00 Annual Public Lecture
Hunger Games - The Control of Appetite
Lora Heisler, University of Aberdeen, UK — Boyd Suite

19:00 Welcome Reception — **Main Arena**

Otto Hutter Prize Lecture

This annual prize is awarded to outstanding teachers of physiology at undergraduate level.

Monday, 8 July • 9:00 – 9:45
Boyd Suite, Ground Floor

Julia Choate, Monash University, Melbourne, Australia

PL01 The perils and pleasures of educating 21st century physiology undergraduates

I feel lucky to teach physiology, as most of my students are extremely interested in the functions of the human body. I create learning environments (interactive guided-inquiry lectures and team-based workshops) that encourage student participation and active engagement with their learning. I mould the physiology concepts so that they are pertinent to students' lives, and incorporate hands-on practical sessions to consolidate knowledge and develop employability and research skills.

Cardiovascular implications of air pollution

Monday, 8 July • 10:00 – 11:30
Gordon A Suite, First Floor

Organiser: Holly Shiels, University of Manchester, UK
Co-organiser: Mark Miller, University of Edinburgh, UK

Speakers

10:00 Paul Wilkinson, London School of Hygiene and Tropical Medicine, UK

10:30 Charlotte Marris, University of Manchester, UK
SA001 The cardiotoxicity of phenanthrene

10:45 Mark Miller, University of Edinburgh, UK
SA002 From car to coronary: inhaled particles and the cardiovascular system

11:00 Jenny Bosson, University of Umeå, Sweden
SA003 The greenwashing of fuels

Novel approaches to physiology practical teaching

Monday, 8 July • 10:00 – 11:30
Boyd Suite, Ground Floor

Organiser: Derek Scott, University of Aberdeen, UK

Speakers

10:00 Richard Helyer, University of Bristol, UK
SA004 Teaching physiology using human-patient simulators

10:30 Abigail Rickard, University of Greenwich, London, UK
SA005 Technology-enhanced learning-by-doing: Inclusive experimental human physiology in Higher Education

10:45 Marc Demolder, University of Antwerp, Belgium
SA006 Teaching physiology practical exercises, education solutions at the University of Antwerp

11:00 Dee Silverthorn, The University of Texas at Austin, USA
SA007 Using invertebrate and plant model systems to teach physiology and experimental design in inquiry-based practical teaching

Supported by ADInstruments

Pain: Nociception to perception

Monday, 8 July • 10:00 – 11:30
Fleming Auditorium, Ground Floor

Organiser: Ewan Smith, University of Cambridge, UK
Co-organiser: David Bulmer, University of Cambridge, UK

Speakers

10:00 John Wood, University College London, UK
SA008 Why sodium channel Nav1.7 is required for pain sensation

10:30 Katy Vincent, University of Oxford, UK
Men and women are not the same – why we need to consider sex and pain

10:45 James Hockley, University of Cambridge, UK
SA009 Single-cell RNAseq reveals seven classes of colonic sensory neuron

11:00 Lucy Donaldson, University of Nottingham, UK
SA010 Finding new analgesic targets – the long way round

For publication in *The Journal of Physiology*

The Journal of Physiology

Epithelia & Membrane Transport A

Monday, 8 July • 10:00 – 11:30
Crombie B Suite, Ground Floor

10:00 Maximillian Woodall, St. George's University, London, UK
C037 The effect of cystic fibrosis sputum on cystic fibrosis transmembrane regulator mediated Cl- transport and airway-surface-liquid height. Is gene editing sufficient to restore function in the cystic fibrosis environment?

10:15 Silviya Radoslavova, LPCM-EA46-67, Université Picardie Jules Vernes, INSERM U1003,Université de Lille, France
C038 Calcium entry through TRPC1 and ORAI1 regulates activated pancreatic stellate cells proliferation

10:30 Luis Sobrevia, Pontificia Universidad Católica de Chile, Universidad de Sevilla, University of Queensland, Chile
C039 Intracellular pH modulation in human umbilical vein endothelial cells requires sodium/proton exchangers activity in gestational diabesity but sodium/proton exchanger-1 activity in gestational diabetes with maternal pre-gestational normal weight or overweight

10:45 Ann Rajnicek, University of Aberdeen, UK
C051 Bioelectrical control of axial regeneration in planaria flatworms

11:00 Francisco Sepulveda, Centro de Estudios Cientificos (CECs), Chile
C041 Exploring the mechanism of inactivation of Kir7.1 K+ channel by snowflake vitreoretinopathy-associated mutation R162W

11:15 Josephine Amosah, University of Surrey, UK
C042 Nox-derived ROS in bladder urothelium – effect of inflammatory mediators and pathological significance

Human & Exercise Physiology A

Monday, 8 July • 10:00 – 11:30
Gordon B Suite, First Floor

10:00 Daniel Wilkinson, University of Nottingham, University of Nottingham, UK
C061 Untargeted metabolomics using a novel bioinformatics approach for classification of human skeletal muscle ageing

10:15 Adam McDermott, Trinity College Dublin, Ireland
C062 Effect of type 2 diabetes in muscle deoxygenation during ramp incremental exercise in older individuals

10:30 Zoe Djajadikarta, Neuroscience Research Australia, Australia
C063 Effect of age on ankle proprioception

10:45 Guy Anselme Messa, Manchester Metropolitan University, UK
C064 Morphological alterations of mouse skeletal muscle during late maturation and early ageing are muscle specific

11:00 Raul Bescos, University of Plymouth, UK
C065 Post-exercise hypotension and skeletal muscle oxygenation is modulated by nitrate-reducing activity of oral bacteria in healthy individuals

11:15 Anatoly Borovik, Institute for Biomedical Problems, Russian Federation
C066 21-day 'dry' immersion of healthy people leads to reduction of baroreflex synchronization of heart rate and arterial pressure during orthostasis, similar to observed in patients with vasavagal syncope

Metabolism & Endocrinology A

Monday, 8 July • 10:00 – 11:30
Crombie A Suite, Ground Floor

10:00 Dawn Thompson, University of Aberdeen, UK
C073 Treatment with the synthetic retinoid Fenretinide protects against fatty liver disease in LDLR-/- mouse model of atherosclerosis

10:15 Ian Salt, University of Glasgow, UK
C074 Adiponectin inhibits contractile signalling via inhibition of Rho-associated protein kinase in human vascular smooth muscle cells

10:30 Gareth Nye, University of Chester, university of manchester, UK
C075 A novel ex vivo and in silico approach to determine placental tissue oxygenation in normal and fetal growth restricted pregnancies

10:45 Holly Jenkins, Kings College London, UK
C076 Classification model for the detection of women at risk of preterm birth based on exosomal miRNAs and proteins in cervico-vaginal fluid at early gestation

11:00 Wen Tong, University of Cambridge, University of Cambridge, UK
C077 Preeclampsia Link to Hypoxic Pregnancy

11:15 Paul Squires, University of Lincoln, UK
C078 ATP reduces functional cell-to-cell tethering between renal tubular epithelial cells

Vascular & Smooth Muscle Physiology A

Monday, 8 July • 10:00 – 11:30
The Balmoral Suite, Ground Floor

10:00 Smriti Badhwar, All India Institute of Medical Sciences, New Delhi, India
C109 Association between vascular stiffness and oscillatory flow pattern in patients with recent Myocardial Infarction

10:15 Natalie Jones, BHF Centre for Cardiovascular Science, The University of Edinburgh, UK
C110 GPR81 activation causes endothelin-1 dependent renal vasoconstriction

10:30 Sara Dobi, Institute of Cardiovascular and Medical Sciences, UK
C111 The effect of the small conducatance calcium-activated potassium channel (SK) inhibitor ICAGEN in intact atria and atrial cardiomyocytes

10:45 Lynn McKeown, University of Leeds, UK
C112 A Ca2+-regulated G protein (Rab46) couples inflammatory stimuli to differential trafficking of Weibel-Palade bodies

11:00 Tuleen Alkawadri, Dundalk Institute of Technology, Ireland
C113 Involvement of M2 muscarinic receptors and Kv7 channels in cholinergic-mediated contractions of murine bronchial rings.

11:15 Felipe Freitas, University College London, UK
C114 Descending vasa recta pericytes mediate medullary no-reflow after renal ischaemia

The Paton Prize Lecture

This lecture aims to promote interest in the history of scientific experiments and ideas. It is given on an historical aspect of physiology.

Monday, 8 July • 12:00 – 12:45
Boyd Suite, Ground Floor

Kevin Fong, University College London, UK

Extremes: Life, Death and the Limits of the Human Body

Monday, 8 July • 13:00 – 14:30
Main Arena, Ground Floor

Lunch

Monday, 8 July • 13:15 – 14:15

Lt: an online platform for Physiology teaching, laboratories and assessment

The Balmoral Suite, Ground Floor

Lt is ADInstruments' cloud-based online learning platform for Life Science education. We have over 340 interactive and customisable lessons across 9 collections, including Human Physiology, Animal Physiology and Neuroscience. Lt integrates with our teaching PowerLab hardware, to enable students to record physiological data and, once they're finished, Lt will remember all the data, so they can login on their own device and finish their lesson at home. In this session we will demonstrate Lt, taking you through one of our Human Physiology modules and show live recording of physiological data. We will show our grading tools by getting attendees to log in to Lt as a student and answer a series of MCQ's – there will be a prize for our top student!
N.B. To participate in the quiz, you will need your own device (Laptop, Tablet or Phone) to access Lt.

Publishing for beginners

Crombie A Suite, Ground Floor

The goal of this session is to introduce postgraduate students, postdoctoral fellows, and early career investigators to some of the unwritten "dos and don'ts" of publishing. Armed with this information, you should be equipped to increase your chances of securing publication of your work in the journal of your choice while avoiding ethical minefields along the way. Although designed for early carer researchers, all are welcome. The content would be useful for senior researchers to disseminate to their teams.

Speakers:

Kim E Barrett, Editor-in-Chief of *The Journal of Physiology*
Mike Tipton, Editor-in-Chief of *Experimental Physiology*

Demonstrating real-world impact in grant applications

Crombie B Suite, Ground Floor

This session provides the opportunity to hear directly from BBSRC the kind of examples and language that funders are looking for in terms of demonstrating impact as part of grant applications. To provide real-life examples of this, we will be joined by academics from a Sport and Exercise Science department that contributed to The Society's recent report Sport & Exercise Science Education: Impact on the UK economy. Case studies highlighted will include examples of how physiological research can be translated into sustained student engagement with some of Scotland's most deprived communities and work to improve individual health outcomes and reduce the economic cost associated with inactivity and poor diet.

Speakers:

Sadhana Sharma, BBSRC, UK
Maja Wållberg, Wellcome Trust, UK
Ashley Richardson, Abertay University, UK

CV review session

Main Arena, Ground Floor

An opportunity for early career physiologists to seek feedback on their CV from an experienced researcher and/or lecturer. Each session will be 15 minutes, and places were allocated by email before the conference. For more information, please see the registration desk.

Exercise in people with pulmonary hypertension: To be avoided at all costs or a viable therapeutic intervention

Monday, 8 July • 14:30 – 16:00
Fleming Auditorium, Ground Floor

Organiser: Bryan Taylor, University of Leeds, UK

Speakers

14:30 Mary-Beth Brown, University of Washington, USA
SA011 Optimizing exercise prescription for pulmonary hypertension: Insight gained from acute and chronic exercise studies in rodent models and in patients

15:00 Al Benson, University of Leeds, UK
SA012 Effects of voluntary exercise on cardiac remodelling and vulnerability to arrhythmia in rats with pulmonary hypertension

15:15 Kirsten Coffman, United States Army Research Institute of Environmental Medicine, USA
SA013 Pulmonary pressures during exercise: Comparing the healthy older adult to the pulmonary hypertension patient

15:30 Luke Howard, Imperial College London, UK
SA014 Using exercise testing in the evaluation of pulmonary hypertension

For publication in *Experimental Physiology*

Experimental Physiology
A Publication of The Physiological Society
EP

Free radicals as double-edged modulators of skeletal muscle function

Monday, 8 July • 14:30 – 16:00
Boyd Suite, Ground Floor

Organiser: Johanna Lanner, Karolinska Institutet, Solna, Sweden
Co-organiser: Malcom Jackson, University of Liverpool, UK

Speakers

14:30 Anne McArdle, University of Liverpool, UK
Oxidative stress and inflammation in ageing muscle

15:00 Maarten Steinz, Karolinska Institutet, Solna, Sweden
SA015 Skeletal muscle redox signalling in rheumatoid arthritis

15:15 Mari Carmen Gómez-Cabrera, University of Valencia, Spain
SA016 Role of redox signaling in skeletal muscle adaptations to training

15:30 Michael Ristow, ETH Zürich, Switzerland
Reactive Oxygen Species (ROS) promote metabolic health and lifespan

A nasty case of the vapours - E-cigarettes friend or foe?

Monday, 8 July • 14:30 – 16:00
Gordon A Suite, First Floor

Organiser: Deborah Baines, St George's, University of London, UK

Speakers

14:30 Tim Marczylo, Public Health England, UK
SA017 The Smokefreebrain study: A multidisciplinary examination of e-cigarette toxicity

15:00 Laura Crotty Alexander, UC San Diego School of Medicine, USA
SA018 Physiologic effects of e-cigarettes on the cardiopulmonary system

15:15 Lisa Miyashita, Queen Mary University of London, UK
SA019 The effect of e-cigarettes on susceptibility to pneumococcal infection

15:30 Robert Tarran, UNC School of Medicine, USA
SA020 What you don't know can't hurt you? The effects of E-cigarettes on the human lung

For publication in *The Journal of Physiology*

The Journal of Physiology

Cardiac & Respiratory Physiology A

Monday, 8 July • 14:30 – 16:00
Crombie B Suite, Ground Floor

14:30 Martins Ainerua, University of manchester, University of Benin, UK
C001 Effect of a Cardiotoxic Pollutant-Phenanthrene on the Cardiac Function of Brown Trout (Salmo trutta)

14:45 Christopher Waters, University Of Kentucky, USA
C002 TREK1 regulates K+ efflux during LPS-induced inflammasome activation

15:00 Joseph Badejo, University of Ibadan, Nigeria
C003 Anti-hypertensive properties and mechanisms of action of the extract and fractions from Persea americana Mill. leaf in rats

15:15 Andrew James, University of Bristol, UK
C004 Inhibition of voltage-gated Na+ currents by eleclazine in adult rat atrial and ventricular myocytes

15:30 Tharsika Sritharan, University of Manchester, UK
C005 The Ultrastructure of the Atrioventricular Node

15:45 Vadim Alexeenko, University of Surrey, University of Cambridge, UK
C006 Prediction of paroxysmal atrial fibrillation in the equine athlete using heart rate adjusted complexity analysis of normal sinus rhythm ECGs

Education & Teaching A

Monday, 8 July • 14:30 – 16:00
The Balmoral Suite, Ground Floor

14:30 Nouralsalhin Alaagib, University of Khartoum, Sudan
C019 Comparison of the effectiveness of lectures based on problems and traditional lectures in physiology teaching in Sudan

14:45 Louise Robson, University of Sheffield, UK
C020 Digital resources and student attainment, using learning analytics to support student success

15:00 Nicholas Freestone, Kingston University, UK
C021 Contesting TESTA: Time on assessed tasks is important for student learning

15:15 Alison Wood, Edinburgh Napier University, UK
C022 An Exploratory Study of Designing and Developing Core Physiology Curriculum for Pre-registration Nursing Education

15:30 Douglas Bovell, Weill Cornell Medicine in Qatar, Qatar
C023 Student perceptions of gamified learning activities

15:45 Christopher Torrens, University of Southampton, UK
C024 Impact of Year 1 Attendance on Exam Performance throughout Medical School

Neuroscience A

Monday, 8 July • 14:30 – 16:00
Crombie A Suite, Ground Floor

14:30 Xuming Zhang, Aston University, United Kingdom
C091 Gαq-coupled Receptors Primarily Opts Direct Gαq Gating for Inhibiting TRPM8 Ion Channels

14:45 Kimberley Stephenson, University College Cork, Ireland
C092 Modified hippocampal long-term potentiation in mdx mice can be recapitulated in wild type comparators by acute exposure to the pro-inflammatory cytokine, interleukin-6

15:00 Dan Johnstone, University of Sydney, Australia
C093 The parkinsonian neurotoxin MPTP induces cerebrovascular leakage that can be mitigated by photobiomodulation

15:15 Rajeevlochan Ravi, University of Plymouth, United Kingdom
C094 The effects of acute hypoxia on cognitive and cardiovascular parameters in healthy subjects

15:30 Alison R. Obergrussberger, Nanion Technologies GmbH, Germany
C095 Ion channels involved in pain pathways: An automated patch clamp study

15:45 Samuel Webb, Manchester Metropolitan University, United Kingdom
C096 Estimation of synaptosome mitochondrial function in the TgF344-AD rat brain

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Cardiac & Respiratory Physiology Poster Communications Session A

PC001 Effect of cigarette smoking on the blood pressure, pulse pressure and resting pulse rate in young adults
Rama M. Musa1, Lamis Kaddam1, Ahmed Elneel2, Humeda humeda3
1physiology , AL-Neelain university , Khartoum, Khartoum, Sudan, 2AL-Neelain university Faculty of medicine, Khartoum, Sudan, 3physiology, International University of Africa, Khartoum, Sudan

PC003 Positive association between initial augmentation of cardiovagal baroreflex sensitivity and onset of arterial pressure decline during passive hyperthermia
Elham Ghadhanfar, Marian Turcani
Department of Physiology, Faculty of Medicine, Kuwait University, Kuwait, Kuwait

PC005 Rats with heart failure show increased gut-to-blood penetration of trimethylamine, a gut bacterial metabolite.
Marek Konop, Adrian Drapala, Kinga Jaworska, Tomasz Hutsch, Klaudia Bielinska, Marta Gawrys-Kopczynska, **Marcin Ufnal**
Department of Experimental Physiology and Pathophysiology, Medical University of Warsaw, Warsaw, Poland

PC007 Peripheral Capillary Oxygen Saturation, Mean Arterial Pressure and Pulse Rate Assessment in Young Shisha Smokers at Kano State, Nigeria.
Basheer I. Waziri, Mustapha A. Yahaya, Isa Sani
Department of Human Physiology, Bayero University Kano, Nigeria., Kano, Kano, Nigeria

PC009 Obstructive Sleep Apnoea reduces cardiac autonomic function in patients with Type 1 Diabetes
Ziyad Alshehri1, 4, Abd A. Tahrani2, 3, Muhammad Ali Karamat3, Quratul-ain Altaf3, Prem Kumar1, Clare J. Ray1
1Institute of Clinical Sciences , University of Birmingham, Birmingham, United Kingdom, 2Institute of Metabolism and Systems, University of Birmingham, Birmingham, United Kingdom, 3Department of Diabetes and Endocrinology, University Hospitals Birmingham NHS Foundation Trust, Birmingham, United Kingdom, 4Respiratory Therapy Department, Taibah University, Medina, Saudi Arabia

PC011 Effects of oxytocin on Ca2+ signalling in newborn rat cardiac myocytes and cardiac fibroblasts.
Ifrah I. Ali1, Suhail Al-Salam2, Frank C. Howarth1, **Anatoliy Shmygol**1
1Department of Physiology, United Arab Emirates University, Al Ain, United Arab Emirates, 2Department of Pathology, United Arab Emirates University, Al Ain, United Arab Emirates

PC013 Acute effect of volitional breathing without and with minimal inspiratory resistance on heart rate variability
Om Lata Bhagat1, Kishore K. Deepak2
1Physiology, All India Institute of Medical Sciences, Jodhpur, India, Jodhpur, Rajasthan, India, 2Physiology, All India Institute of Medical Sciences, Delhi, Delhi, Delhi, India

PC015 Changes of osteoprotegerin serum level of diabetes mellitus rat model after exercise
Miranti D. Pramaningtyas1, Anif F. Muttaqina2
1Department of Physiology, Medical Faculty, Universitas Islam Indonesia, Sleman, Yogyakarta, Indonesia, 2Medical Student, Medical Faculty, Universitas Islam Indonesia, Sleman, Yogyakarta, Indonesia

PC017 Mitochondrial succinate metabolism is important in setting carotid body chemoafferent activity in normoxia and hypoxia
Andrew Coney1, Clare J. Ray1, Abdulaziz Alzahrani1, 3, Photini Georgiadou1, Agnieszka Swiderska1, Nikolaos Batis2, Prem Kumar1, **Andrew P. Holmes**1
1Institute of Clinical Sciences, University of Birmingham, Birmingham, United Kingdom, 2Institute of Cancer and Genomic Sciences, University of Birmingham, Birmingham, United Kingdom, 3Respiratory Care Department, College of Applied Medical Sciences, Umm Al-Qura University, Makkah, Saudi Arabia

PC019 Sex differences in cardiovascular responses to postural stress among young Black African adults
Abimbola O. Aiku1, 2, Ebunoluwa Adagbada1, Samson Ogbona1, Adesoji Fasanmade1
1Physiology, University of Ibadan, Ibadan, Oyo state, Nigeria, 2Institute of Cardiovascular Sciences, University of Birmingham, Birmingham, United Kingdom

PC021 Effects of prolactin on ventricular myocyte shortening and calcium transport in the streptozotocin-induced diabetic rat
Frank C. Howarth1, Anatoliy Shmygol1, Anwar Qureshi1, Ozaz Mohamed1, Lina Al Kury2, Gunnar Norstedt3
1Physiology, UAE University, Al Ain, United Arab Emirates, 2College of Natural & Health Sciences, Zayed University, Abu Dhabi, United Kingdom, 3Biochemistry, Sultan Qaboos University, Muscat, Oman

PC023 Ionised concentrations in Ca2+ and Mg2+ buffers must be measured not calculated
John A. McGuigan1, James W. Kay2, Hugh Y. Elder3
1Institute of Physiology, Berne, Switzerland, 2School of Mathematics and Statistics, Glasgow, United Kingdom, 3School of Life Sciences, Glasgow, United Kingdom

PC025 Dyadic targeted Ca2+ indicator reveals heterogeneity in Ca2+ release between dyads that is modified by G-protein coupled receptor (GPCR) signaling
Kateryna Demydenko, Karin Sipido, H Llewelyn Roderick
Cardiovascular Sciences, KU Leuven, Leuven, Belgium

PC027 Remodelling of the ryanodine receptor clustering patterns in acute right ventricular heart failure following monocrotaline-induced pulmonary arterial hypertension
Miriam E. Hurley, Thomas M. Sheard, Ruth Norman, Eleftheria Pervolaraki, Kaarjel K. Narayanasamy, Hannah M. Kirton, Zhaokang Yang, DS Steele, Ed White, Izzy Jayasinghe
University of Leeds, Leeds, United Kingdom

PC029 CRISPR-based RyR2 gene editing in patient-derived stem cell cardiomyocytes to study and treat rare changes in inherited cardiac arrhythmia
Miriam Lettieri1, Cecilia Facchi1, Andrew Trafford1, Antony Adamson2, Luigi Venetucci1
1Cardiovascular Sciences, University of Manchester , Manchester , England, United Kingdom, 2Faculty of Biology, Medicine and Health, University of Manchester, Manchester, England, United Kingdom

PC031 In vivo non-invasive imaging of inflammation in a preclinical model of myocardial infarction using 18F-LW223 and Positron Emission Tomography
Mark G. MacAskill1, 2, Nick Spath1, Tashfeen Walton1, 2, Lewis Williams3, Timaeus Morgan3, Nikki Sloan3, Carlos J. Alcaide-Corral1, 2, William Mungall1, Marc R. Dweck1, Gillian Gray1, David Newby1, Christophe Lucatelli2, Andrew Sutherland3, Sally L. Pimlott4, 5, Adriana A. Tavares1, 2
1University/ BHF Centre for Cardiovascular Science, University of Edinburgh, Edinburgh, United Kingdom, 2Edinburgh Imaging, University of Edinburgh, Edinburgh, United Kingdom, 3School of Chemistry, University of Glasgow, Glasgow, United Kingdom, 4School of Medicine, University of Glasgow, Glasgow, United Kingdom, 5NHS Greater Glasgow and Clyde, Glasgow, United Kingdom

PC033 Changes in the morphology and density of transverse (t)-tubule networks in sheep atrial myocytes during postnatal development.
Charlotte Smith, **Callum Quinn**, Zain Sultan, Hana Najem, David Eisner, Christian Pinali, Andrew Trafford, Katharine Dibb
Cardiovascular Sciences, University of Manchester, Manchester, United Kingdom

PC035 Spatial differences in atrial calcium release in heart failure
Charlotte Smith, Jessica Clarke, David Eisner, Andrew Trafford, Katharine Dibb
University of Manchester, Manchester, United Kingdom

PC037 An assessment of some white blood cell and platelet parameters amongst normotensive, newly diagnosed hypertensive and known hypertensive subjects in Port Harcourt, Nigeria.
Datonye V. Dapper, Chidinma Ijeoma Eziuzo
Department of Human Physiology, University of Port Harcourt, Port Harcourt, Nigeria, Port Harcourt, Rivers State, Nigeria

PC039 Genetic determinants of cardiovascular reactions in humans with different combinations of alleles in Bradykinin receptor B2 (BDKRB2) and Angiotensin-converting enzyme (ACE) genes in response to the diving reflex
Ekaterina Podyacheva, Tatyana Baranova
Saint Petersburg State University, Saint Petersburg, Russian Federation

PC041 An investigation of small conductance Ca2+-activated K+ current (ISK)
in rabbit and human atrial cardiomyocytes
Alessandro Giommi, Aline R. Gurgel, Godfrey L. Smith, Antony J. Workman, Priyanka Saxena
University of Glasgow, Glasgow, United Kingdom

PC043 Regulation of the human voltage-gated K+ channel Kv1.5 by Gasotransmitters; a role in the cardiovascular system.
Moza Al-Owais, JD Lippiat, J.L. Scragg, DS Steele, C Peers
University of Leeds, Leeds, United Kingdom

PC045 Oligomerisation of the cardiac Nav1.5 channel with and without the auxiliary β3-subunit.
Samantha C. Salvage1, Johanna Rees1, Alexandra McStea2, Lin Wang2, Michael Hirsch2, Chris Tynan2, Matthew W. Reed3, Jennifer R. Irons1, Richard Butler4, Andrew J. Thompson5, Marisa Martin-Fernandez2, Christopher L. Huang6, 1, Antony P. Jackson1
1Department of Biochemistry, University of Cambridge, Cambridge, United Kingdom, 2Central Laser Facility, Research Complex at Harwell, Science and Technology Facilities Council, Rutherford Appleton Laboratory, Oxford, Didcot, United Kingdom, 3Department of Nuclear Physics, Research School of Physics and Engineering, Australian National University, Canberra, Australian Capital Territory, Australia, 4Wellcome Trust/Cancer Research UK Gurdon Institute, University of Cambridge, Cambridge, United Kingdom, 5Department of Pharmacology, University of Cambridge, Cambridge, United Kingdom, 6Physiology Department, University of Cambridge, Cambridge, United Kingdom

PC047 A role for male, but not female, macrophages in the clearance of endothelin-1
Greg Sutton, Alicja Czopek, Timm Krueger, Filippo Menolascina, Neeraj (Bean) Dhaun
University of Edinburgh, Edinburgh, United Kingdom

PC049 Versican upregulation in prematurity-related pulmonary hypertension
Ya-Ting Chang1, 2, Ming-Chou Chiang1, 2, Hao-Chuan Liu1, 2
1Pediatrics, Chang Gung Memorial Hospital, Taoyuan, Taiwan, 2College of Medicine, Chang Gung University, Taoyuan, Taiwan

PC051 Investigating diabetes-induced changes in lung microbiome using next-generation sequencing in animal models.
Stanislavs Vasiljevs, Deborah Baines
St George's University of London, London, United Kingdom

PC053 3D printed upper airway models with tuneable postural orientation
Laura Gorman1, Tiarnan Byrne1, Thomas Campbell1, James F. Jones1, Conan McCaul2
1Anatomy, School of Medicine, Dublin, Ireland, 2Rotunda Hospital Dublin, Dublin, Ireland

PC055 The role of microtubules for actin coat formation during the post-fusion phase of surfactant exocytosis in lung alveolar type II cells
Tabitha Müller1, Rebekka Schempp1, Anngrit Lutz1, Tatiana Felder1, Edward Felder1, **Pika Miklavc**2
1Ulm University, Ulm, Germany, 2University of Salford, Salford, United Kingdom

Education & Teaching Poster Communications Session A

PC057 The application of bioinformatics to investigate the potential for large farm animal tissues in translational research
Helene Widmer, Bernadette Adeyileka, Stuart Cruickshank, Alison Strath, Iain Rowe
Robert Gordon University, Aberdeen, United Kingdom

PC059 Use of clinical teaching simulators by Medical Science students to improve engagement and in depth understanding of Immunology
marwan albuhtori, Isabel J. Crane
Medicine, Medical Sciences and Nutrition, University of Aberdeen, Aberdeen, United Kingdom

PC061 Novel Cross Faculty Final Year Research Project: Classical and Physiological Perceptions of Sex and Gender.
Dawn Davies1, Lucy Cross1, Emily Duffy1, Max Lewisohn1, Emma Walton1, Vanda Zajko2, Frances MacMillan1
1Physiology, Pharmacology and Neuroscience, University of Bristol, Bristol, United Kingdom, 2Classics & Ancient History, University of Bristol, Bristol, United Kingdom

PC063 A novel final year experimental research project: Using objective measures of physical activity to investigate the effect of exercise on wellbeing in undergraduates.
Frances MacMillan1, Alexandra A. Carrie1, Nicole Chan1, Peter Burrows2
1Physiology, Pharmacology and Neuroscience, University of Bristol, Bristol, United Kingdom, 2Centre for Sport, Exercise & Health, University of Bristol, Bristol, United Kingdom

PC065 Culturing Enterprise Skills in Bioscience Students
Ann Davidson2, Matthew Gardiner2, Joy Perkins3, Pietro Marini1, **John Barrow**1
1Institute of Education for Medical and Dental Sciences, University of Aberdeen, Aberdeen, United Kingdom, 2Scottish Institute for Enterprise, Glasgow, United Kingdom, 3Centre for Academic Development, University of Aberdeen, Aberdeen, United Kingdom

PC067 Emerging Ideas for Paperless Laboratory Classes
John Barrow, Derek Scott
Institute of Education for Medical and Dental Sciences, University of Aberdeen, Aberdeen, Aberdeenshire, United Kingdom

PC069 Embedding work placed learning within the Medical Science Curriculum through capstone projects: a pilot study
Christine Roberts1, James C. Bamford1, Adam M. Gillespie1, Dylan Haughney1, Jordan-Lee Morrice1, Edward Poyner1, Kelsey Stewart1, Kevin Watson2, Ken Bryson2, **Jenny S. Gregory**1
1University of Aberdeen, Aberdeen, United Kingdom, 2Total Endurance Ltd., Aberdeen, United Kingdom

PC071 Easy as 4-AT: Improving Delirium Screening in Acute Elderly Admissions with a Targeted Educational Intervention by Science Students – A Pilot Study.
Conor Cooper1, **Derek Scott**1, Alexandra Hunter1, Jeffrey Handyside1, Victoria Henderson2
1Institute of Education for Medical & Dental Sciences, University of Aberdeen, Aberdeen, United Kingdom, 2Dr Gray's Hospital, NHS Grampian, Elgin, United Kingdom

PC073 An Assessment of Students' and Health Professional' Abilities to Site Stomas Accurately on Human Cadavers.
Andrew Arnott1, Louise Cowpland1, Josephine Jury1, Ian Stewart1, Aileen McKInley2, **Derek Scott**1
1Institute of Education for Medical & Dental Sciences, University of Aberdeen, Aberdeen, United Kingdom, 2Aberdeen Royal Infirmary, NHS Grampian, Aberdeen, United Kingdom

PC075 Assessing Geriatric Proton Pump Inhibitor Prescribing and Polypharmacy in General Practice with an Educational Intervention by Physiology Students.
Michael Pollock, Ben Roddy, **Derek Scott**
Institute of Education for Medical & Dental Sciences, University of Aberdeen, Aberdeen, United Kingdom

PC077 Clarifying Renal Clearance: An educational approach using visualisation of virtual volumes via student-developed video resources.
Kirsten Bradshaw, **Derek Scott**
Institute of Education for Medical & Dental Sciences, University of Aberdeen, Aberdeen, United Kingdom

Epithelia & Membrane Transport Poster Communications Session A

PC079 Na+-Taurocholate cotransporting polypeptide (Ntcp) mediates thyroxine transport in sheep choroid plexus
Nouhad A. Kassem1, 3, Kazem Zibara2, Mirna Sabra1, Youssef Fares1, Jane Preston3, Rashid Deane4
1Neuroscience Research Center (NRC), Medical School, Lebanese University, Hadath, Beirut, Lebanon, 2Biology, Lebanese University, Beirut, Lebanon, 3Institute of Pharmaceutical Science, King's College London, London, United Kingdom, 4Medical School, Rochester University, New York, New York, United States

PC081 Effect of vape carriers propylene glycol and vegetable glycerine on epithelial permeability and glucose uptake in airway cells.
Jerush G. Jacob1, Maximillian Woodall1, Inayat Kahn Khan1, Robert Tarran2, Deborah Baines1
1Institute of infection & Immunity, St George's University of London, London, United Kingdom, 2Cell Biology and Physiology, University of North Carolina, Chapel Hill, North Carolina, United States

PC083 Increased blood-to-stool ratio of short-chain fatty acids as a new marker in inflammatory bowel disease.
Kinga Jaworska1, Marek Konop1, Klaudia Bielinska1, Tomasz Hutsch1, Marcin Dziekiewicz2, Aleksandra Banaszkiewicz2, Marcin Ufnal1
1Department of Experimental Physiology and Pathophysiology, Medical University of Warsaw, Warsaw, Poland, 2Department of Pediatric Gastroenterology and Nutrition, Medical University of Warsaw, Warsaw, Poland

PC085 Physiological relevance of intestinal paracellular Na+ pathways for Na+-coupled glucose transport in mouse small intestine
Hisayoshi Hayashi, Michiko Nakayama, Noriko Ishizuka
University of Shizuoka, Shizuoka, Japan

PC087 Anion species confounds measurement of intracellular Ca2+ in murine white fat adipocytes.
Paul A. Smith, Nneoma Akaniro-Ejim
Life Sciences, University of Nottingham, Nottingham, United Kingdom

PC089 The ameliorative effect of methanol stem extract of Moringa oleifera in glycerol-induced acute kidney damage in rats through Kim-1 and NF-κB signaling pathways
Adeolu A. Adedapo1, Utibe Etim1, Olufunke Falayi1, Bisi Adeoye1, Ademola Oyagbemi3, Temidayo Omobowale2, Momoh Yakubu4, Blessing Ogunpolu2
1Veterinary Pharmacology and Toxicology, University of Ibadan, Ibadan, Oyo State, Nigeria, 2Veterinary Medicine, University of Ibadan , Ibadan, Oyo, Nigeria, 3Veterinary Physiology and Biochemistry, University of Ibadan, Ibadan, Oyo, Nigeria, 4College of Science, Engineering and Technology, Texas Southern University, Houston, Texas, United States

Human & Exercise Physiology Poster Communications Session A

PC091 Heat treatment improves the exaggerated exercise pressor reflex in rats with peripheral artery disease and engagement of P2X
Jianhua Li, Chunying Yang
Heart and Vascular Institute, Penn State University College of Medicine, Hershey, Pennsylvania, United States

PC093 Osteoprotegerin (OPG) as a potential therapeutic target to combat inflammation associated with ageing and other comorbidities.
Jessica Piasecki1, Nasser Al-Shanti2, Jamie McPhee2
1Sport Science, Nottingham Trent University, Nottingham, United Kingdom, 2Department of Sport and Exercise Sciences, Manchester Metropolitan University, Manchester, United Kingdom

PC095 The plasticity of "exercise adaptability" in relation to resistance vs. endurance training
Wesam F. Farrash1, 3, Elisa Crombie1, Nima Gharahdaghi1, Philip J. Herrod1, Daniel Wilkinson1, 2, ken Smith1, 2, Bethan Phillips1, 2, Philip Atherton2
1University of Nottingham, Derby, United Kingdom, 2NIHR BRC, Nottingham, United Kingdom, 3Applied Medical Sciences, Umm Al-Qura University, Makkah, Makkah, Saudi Arabia

PC097 Steady state of respiratory gases is not necessary to achieve reliable resting metabolic rate measurements: a reliability study using the Vyntus CPX system.
José L. Areta1, Juma Iraki2, Ina Garthe3, Gøran Paulsen3, Gary Slater4
1School of Sport and Exercise Sciences, Liverpool John Moores University, Liverpool, United Kingdom, 2Iraki Nutrition, Oslo, Norway, 3Norwegian Olympic Centre, Oslo, Norway, 4University of the Sunshine Coast, Sunshine Coast, Queensland, Australia

PC101 Genotyping analyses of lean body mass and hand grip strength-associated single nucleotide polymorphisms in master athletes
Hannah Crossland1, Daniel McCormick1, Jessica Piasecki2, Daniel Wilkinson1, Kenneth Smith1, Jamie McPhee3, Mathew Piasecki1, Philip Atherton1
1MRC-ARUK Centre for Musculoskeletal Ageing Research & NIHR Nottingham BRC, University of Nottingham, Derby, United Kingdom, 2Musculoskeletal Physiology Research Group, Sport, Health and Performance Enhancement Research Centre, School of Science and Technology, Nottingham Trent University, Nottingham, United Kingdom, 3Department of Sport and Exercise Sciences, Faculty of Science and Engineering, Manchester Metropolitan University, Manchester, United Kingdom

PC103 The Effects of a Short-Term Heat Acclimation Protocol in Elite Amateur Boxers
Brandon Stone1, 2, John Ashley1, Robert Skinner2, Jose Polanco2, Mason Walters2, J. **Mikhail Kellawan**1
1Health and Exercise Science, University of Oklahoma, Colorado Springs, Colorado, United States, 2United States Olympic Committee, Colorado Springs, Colorado, United States

PC105 Recurrent concussion in retired rugby union players is associated with cerebral hypoperfusion and cognitive impairment
Tom S. Owens, Thomas A. Calverley, Benjamin S. Stacey, Chris Marley, Hayato Tsukamoto, Martin Steggall, Gareth Jones, Lewis Fall, Lucy Venables, Bruce Davies, Priscilla Williams, Damian Bailey
Faculty of Life Science and Education, University of South Wales, Llanelli, Carmarthenshire, United Arab Emirates

PC109 A Combined Approach of Vitamin D Supplementation and a Physical Activity Intervention in a CVD and Diabetes 'at risk' UAE cohort
Sarah Dalibalta1, Gareth Davison2
1American University of Sharjah, Sharjah, United Arab Emirates, 2university of ulster, Jordanstown, United Kingdom

PC111 SPECTRA ANALYSIS OF THE INTERACTIONS BETWEEN N-ACETYLCYSTEINE AND SPERM DNA FOLLOWING CYCLOPHOSPHAMIDE EXPOSURE IN-VITRO
Seyyid A. Shittu, Oluwaseyi B. Owoeye, Yinusa Raji
Department of Physiology, College of Medicine, University of Ibadan, Ibadan, Nigeria

PC113 A 'Combined Oral Stable Isotope Assessment of Muscle' (COSIAM) approach to simultaneously quantify muscle mass and protein turnover: implications for ageing
Jessica Cegielski, Daniel Wilkinson, Matthew S. Brook, Boereboom Catherine, Bethan Phillips, John Gladman, Kenneth Smith, Philip J. Atherton
MRC/ARUK Centre for Musculoskeletal Ageing Research & NIHR Nottingham BRC, School of Medicine, University of Nottingham, Derby, United Kingdom

PC115 Effects of mild whole-body hypothermia on prefrontal cortex cerebral oxygenation during cycling at moderate, heavy, and severe intensities
Dominique Gagnon1, 2, Nicholas Barclay1, 2, Stephanie Munten1
1Human Kinetics, Laurentian University, Sudbury, Ontario, Canada, 2Center for Research in Occupational Safety and Health, Laurentian University, Sudbury, Ontario, Canada

PC117 Overexpression of major histocompatibility complex I induces mitochondrial dysfunction in human skeletal muscle myoblasts
Anastasia Thoma2, Tania Akter-Miah2, Holly L. Bond2, Gareth A. Nye1, Robert Cooper3, Adam Lightfoot2
1Chester Medical School, University of Chester, Chester, United Kingdom, 2Musculoskeletal Science & Sports Medicine Research Centre, Manchester Metropolitan University, Manchester, United Kingdom, 3University of Liverpool, Liverpool, United Kingdom

PC119 Pharmaceutical endogenous testosterone depletion blunts resistance exercise-induced hypertrophy in younger men via impairing muscle growth programming
Nima Gharahdaghi, Supreeth Rudrappa, Bethan E Phillips, Matthew S. Brook, Wesam F. Farrash, Mohammed Hariz Aziz, Iskandar Idris, Philip J. Herrod, Tanvir Sian, Daniel J. Wilkinson, Nathaniel J. Szewczyk, Kenneth Smith, Philip J. Atherton
Medical Sciences & Graduate Entry Medicine, University of Nottingham, Derby, United Kingdom

PC121 Comparative assessment of some indices of renal function amongst HIV seronegative subjects, HIV seropositive ART naïve subjects and HIV seropositive subjects on ART in Port Harcourt, Nigeria.
Comfort O. Iyama-Boma, Stephenson D. Lawson, Friday Saronee, Arthur N. CHUEMERE, **Datonye V. Dapper**
Department of Human Physiology, University of Port Harcourt, Port Harcourt, Nigeria, Port Harcourt, Rivers State, Nigeria

PC123 Physical activity confers neuroprotective benefits in young females; focus on improved cerebrovascular reactivity.
Thomas A. Calverley1, Chris Marley1, Tom S. Owens1, Benjamin S. Stacey1, Martin Steggall1, Lewis Fall1, Lucy Venables2, Hayato J. Tsukamoto1, Damian Bailey1
1University of South Wales, Cardiff, United Kingdom, 2Cardiff University, Cardiff, United Kingdom

PC125 Exercise-onset-induced hypotension activates cerebrovascular response to exercise
John D. Ashley, Joseph H. Shelley, Jongjoo Sun, Brandon Stone, Luis Ambrosio, J. Mikhail Kellawan
Health and Exercise Science, University of Oklahoma, Norman, Oklahoma, United States

PC127 Electrical stimulation via the motor nerve may recruit from a more variable motor unit pool than direct muscle stimulation
Thomas B. Inns, Daniel McCormick, Bethan Phillips, Mathew Piasecki
School of Medicine, MRC-ARUK Centre for Musculoskeletal Ageing Research, University of Nottingham, Derby, United Kingdom

PC129 Isolated fast-twitch extensor digitorium longus muscles from old mdx dystrophic mice show little force recovery 120 minutes after eccentric damage
Leonit Kiriaev1, Sindy Kueh1, John Morley1, Kathryn North2, Peter Houweling2, **Stewart I. Head**1
1Medicine, Western Sydney University, Sydney, New South Wales, Australia, 2Murdoch Children's Research Institute, Melbourne, Victoria, Australia

PC131 Imposed expiratory resistance and pulmonary function in young healthy volunteers
Monica Bari, Jyotika Erram, **Daniel T. Cannon**
School of Exercise & Nutritional Sciences, San Diego State University, San Diego, California, United States

PC133 Effects of Progressive Resistance Training Targeting Muscles Rich in Type One Fibers on Ventilatory Efficiency
Elif Sahin2, Ahmet AYAR1
1Physiology, Karadeniz Technical University, Trabzon, Turkey, 2Physiotherapy and Rehabilitation, Recep Tayyip Erdogan University, Rize, Turkey

Metabolism & Endocrinology Poster Communications Session A

PC137 Sex Differences In Cardiovascular Responses To Squat Test In Diabetic And Non Diabetic Adults
Abimbola O. Aiku1, 2, Samson Ogbona1, Ebunoluwa Adagbada1, Adesoji Fasanmade1
1Physiology, University of Ibadan, Ibadan, Oyo state, Nigeria, 2Institute of Cardiovascular Sciences, University of Birmingham, Birmingham, United Kingdom

PC139 Suppression of (pro)renin receptor expression inhibits autophagy and decreases cell proliferation in cultured cancer cells
Kazuhiro Takahashi, Sigemitsu Sato, Moe Endo, Yurina Yokota, Koji Ohba
Department of Endocrinology & Applied Medical Science, Tohoku University Graduate School of Medicine, Sendai, Miyagi, Japan

PC141 AMP-activated protein kinase inhibits insulin-stimulated glucose and fatty acid uptake in adipocytes
Fatmah Alghamdi, Ian Salt
Institute of Cardiovascular & Medical Sciences, university of glasgow, Glasgow, United Kingdom

PC143 Bioinformatics guided study on the anticancer effect of aspirin
Zhen Zhang1, **Lijun Shang**1, 2
1Northwest University, Xi'an, China, 2Bradford University, Bradford, United Kingdom

PC145 Hepatic transcriptome reveals novel gene targets of the synthetic retinoid Fenretinide in mouse models of obesity
Shehroz Mahmood1, Nicola Morrice1, 2, Dawn Thompson1, Nimesh Mody1
1Aberdeen Cardiovascular & Diabetes Centre, Institute of Medical Sciences, University of Aberdeen, Aberdeen, United Kingdom, 2Centre for Genome Enabled Biology and Medicine (CGEBM), University of Aberdeen, Aberdeen, United Kingdom

PC147 Caveolin-1 K.O. mice exposed to a high fat diet exhibit a lipotoxic milieu but less beta pancreatic damage compared to wild type mice
Paloma M. Lillo1, Sergio Wehinger2, Paola Llanos1, 3, Olinda Nuñez2
1Facultad de Medicina, Universidad de Chile, Chile, Santiago, Chile, 21Department of Clinical Biochemistry and Immunohematology, Universidad de Talca, Talca, Chile, 3Instituto de investigación en ciencias odontológicas, Universidad de Chile, Santiago, Chile

PC149 Autophagy Regulates Extracellular Vesicle Formation in Cells under Metabolic Stress.
Ana Muniz1, Montserrat Romero2, Antonio Zorzano2, Silvia Mora1
1Physiology, University of Liverpool, Liverpool, United Kingdom, 2IRB, Barcelona, Spain

PC151 Cbl/CAP are essential for mitochondria respiration complex assembly and bioenergetics efficiency in muscle cells.
Cho Cho Aye1, Dean E. Hammond1, Sergio Rodriguez-Cuenca2, Mary K. Doherty3, Phillip D. Whitfield3, Marie Phelan1, Chenjing Yang1, Rafael Perez-Perez4, Xiaoxin Li1, Angels Diaz-Ramos5, Antonio Vidal-Puig2, Antonio Zorzano5, Cristina Ugalde4, **Silvia Mora**1
1Physiology, University of Liverpool, Liverpool, United Kingdom, 2University of Cambridge, Cambridge, United Kingdom, 3University of Highlands and Islands, Inverness, United Kingdom, 4Hospital 12 Octubre, Madrid, Spain, 5IRB, Barcelona, Spain

PC153 Osteoblast-specific Enpp1 deficiency engenders increased bone mass and insulin resistance
Fiona L. Roberts1, Nabil Rashdan1, Isabel Orriss2, Elspeth Milne1, Nik Morton3, Colin Farquharson1, Vicky E. Macrae1
1Developmental Biology, Roslin Institute, Edinburgh, Midlothian, United Kingdom, 2Department of Comparative Biomedical Sciences, Royal Veterinary College, London, United Kingdom, 3Department of Cardiovascular Sciences, Queen's Medical Research Institute, Edinburgh, United Kingdom

PC155 Insulin sensitivity was enhanced by Ocimum gratissimum leaf extract in Wistar rats with dexamethasone-induced metabolic syndrome
Shehu-Tijani T. Shittu, Taye J. Lasisi, Seyyid A. Shittu, Adeyinka Adeyemi, Akinola Alada
Department of Physiology, University of Ibadan, Ibadan, Nigeria

PC157 Investigating enhancer activity of a finemapped WARS2-TBX15 GWAS locus associated with waist-hip ratio
Rebecca Dumbell1, Milan Muso1, Louisa Zolkiewski1, Samantha Laber1, 2, 3, Liz Bentley1, Roger Cox1
1Mammalian Genetic Unit, MRC Harwell Institute, Didcot, Oxon, United Kingdom, 2The Broad Institute, Cambridge, Massachusetts, United States, 3The Big Data Institute, University of Oxford, Oxford, United Kingdom

PC159 High fat diet and small intestine: morphological and immunocytochemical changes in a murine experimental model
Ana Obeso1, Asunción Rocher1, Elena Olea2, Silvia V Conde3, Jesus Prieto-Lloret1, Elvira Gonzalez-Obeso4
1Departamento de Bioquímica y Biología Molecular y Fisiología, Facultad de Medicina, Universidad de Valladolid, Spain. Instituto de Biología y Genética Molecular, IBGM, CESIC. Spain, Valladolid, Spain, 2Departamento de Enfermería, Universidad de Valladolid, Facultad de Enfermeria, Valladolid, Spain, 3CEDOC, NOVA Medical School, Faculdade de Ciências Médicas, Universidade NOVA de Lisboa, Lisbon, Lisbon, Portugal, 4Servicio de Anatomía Patológica, Hospital Clínico Universitario de Valladolid. Spain, Valladolid, Spain

PC161 Perinatal programming of intestinal homeostasis following exposure to low dose of chlorpyrifos in male rats offspring
Marion Guibourdenche1, 2, Hiba El Khayat El Sabbouri1, Amina Bouzerara3, Narimane Djekkoun1, Hafida Khorsi-Cauet1, Jean Guibourdenche3, Véronique Bach1, Pauline M Anton2, Jérôme Gay-Quéheillard1
1PériTox, Périnatalité & Risques Toxiques, UMR-I 01 , UPJV, Amiens, France, Amiens, France, 2Equipe PETALES – EA 7519 - Unité Transformations & Agro-Ressources, UniLaSalle, Beauvais, France, 3Biologie hormonale, CHU Cochin, Université Paris Descartes, AP-HP, Paris, France

PC163 In vitro suppression of adipogenic markers in adipose cells treated with rilpivirine and quercetin.
Shalini Behl1, Abdu Adem2, Naheed Amir2, Arif Hussain3 and **Jaipaul Singh**1
1School of Forensic and Applied Sciences, University of Central Lancashire, Preston, UK, 2Department of Pharmacology, United Arab Emirates (UAE) University, Al Ain, UAE and 3School of Life Sciences, Manipal Academy of Higher Education, Dubai, UAE.

PC165 Beneficial use of bitter melon (Momordicacharantia) to treat diabetes and hypertension in Guyana
Jaipaul Singh
Forensic and applied sciences, University of Central lancashire, Lancashire, Preston, United Kingdom

PC167 Fructose-induced hepatic steatosis is prevented by daily dietary quercetin supplementation in male Sprague Dawley rats, post-weaning
Malehope C. Molopo, Kennedy H. Erlwanger, **Janine Donaldson**
School of Physiology, University of the Witwatersrand, Johannesburg, South Africa

PC169 Effect of Gum Arabic (Acacia Senegal) suplementation on serum Adiponectin level in patients with type 2 diabetes mellitus: a randomized and placebo-controlled clinical trial
Rasha Babiker1, Amal M. Saeed2
1Physiology, University of Medical Sciences and Technology, Khartoum, Sudan, 2Physiology, University of Khartoum, Khartoum, Sudan

PC171 Chronic consumption of high and low salt diet impairs female reproductive cycle in Sprague-Dawley rats
Odunayo M. Olumide, Ibiyemi I. Olatunji-Bello
Physiology, Lagos State University College Of Medicine, Ikeja, Lagos, Nigeria

PC173 EFFECT OF CHRONIC CAFFEINE CONSUMPTION ON CARDIAC TISSUE METABOLISM IN RABBITS
Akinola Alada1, Williams Nabofa2
1Physiology, University of Ibadan, Ibadan, Oyo, Nigeria, 2Physiology, Babcock University, Remo-Ilishan, Ogun, Nigeria

PC175 Association between haematological parameters and body mass index among an adult population in Kaduna, Northwestern Nigeria
Fatima L. Ciroma
Human Physiology, Kaduna State University, Kaduna North, Kaduna, Nigeria

PC177 Association between Birth Weight and Metabolic Syndrome among Healthy Medical Student in Al Neelain University Faculty of Medicine
Tasabeeh A. Alnoor1, 2, Lamis Kaddam1, Marwa Mohammed1, Humeda Humeda2, Faris Altekena1
1Physiology, Alneelain University, Khartoum, Sudan, 2Physiology, International University of Africa, Khartoum, Sudan

PC179 Combined administration of omega-3 fatty acids and metformin had more desirable effects on indices of bone mineralization in experimental diabetic rats
Tahir A. Abdussalam, Wale Johnson, Luqman A. Olayaki
Department of Physiology, University of Ilorin, Nigeria, Ilorin, Kwara, Nigeria

PC181 Maternal fat consumption may induce oxidative challenge in the offspring with severe reproductive consequences
TOLUWALOPE E. ADEYEMI, MAHENDRA CHANNA, ANAND NADAR
DEPARTMENT OF PHYSIOLOGY, UNIVERSITY OF KWAZULU NATAL, DURBAN SOUTH AFRICA, Durban, South Africa

PC183 PERILIPIN 5, A LIPID DROPLET-BINDING PROTEIN, PROTECTS FROM NOX2-DEPENDENT OXIDATIVE STRESS ON FETAL MUSCLE FROM A MICE MODEL OF GESTATIONAL OBESITY
Gabriel E. Valdebenito, Daniela Alvarez, Macarena Ortiz, Alejandra Espinosa, Manuel Maliqueo
University of Chile, Concepcion, Chile

PC187 Short-term smoking cessation improves skeletal muscle structure and mitochondrial function
Tom Ajime1, 2, Jef Serre1, Guy Anselme Mpaka Messa3, Anandini Swaminathan4, Karen Maes1, Rob C.I. Wüst5, Hans Degens3, Thierry Troosters2, 1, Ghislaine Gayan-Ramirez1
1Laboratory of Respiratory Diseases, Department of Chronic Diseases, Metabolism and Ageing, KU Leuven, Belgium, Katholieke Universiteit Leuven, Leuven, Belgium, 2Research Group for rehabilitation in internal disorders, Department of Rehabilitation sciences, KU Leuven, Belgium., Katholieke Universiteit Leuven, Leuven, Belgium, 3Research center for musculoskeletal science and sports medicine, Manchester Metropolitan University, Manchester, United Kingdom, 4Lithuanian Sports University, Kaunas, Lithuania, 5Department of Human Movement Sciences, Faculty of Behavioural and Movement Sciences, VU University Amsterdam, Amsterdam, Netherlands

PC189 Ameliorative Effect of Resveratrol on Live Body Weight, Blood Glucose level and Serum Liver Enzymes in Cholesterol Diet Fed Rabbits
Abdulazeez Jimoh1, Joseph O. Ayo2, Yusuf Tanko6, Umar Muhammed Bello3, Ahmed Abubakar4, Aliyu Mohammed5
1Human Physiology Department, Ahmadu Bello University, Zaria, Kaduna State, Nigeria, 2Department Veterinary Physiology, Ahmadu Bello University, Zaria, Nigeria, Zaria, Nigeria, 3Laboratory of Cell Biology and Histology, Veterinary Anatomy Department, Ahmadu Bello University, Zaria, Nigeria, Zaria, Kaduna State, Nigeria, 4Department of Pharmacognosy and Drug Development, Ahmadu Bello University, Zaria, Nigeria, Zaria, Kaduna State, Nigeria, 5Human Physiology Department, Ahmadu Bello University, Zaria, Nigeria, Zaria, Kaduna State, Nigeria, 6Human Physiology Department, Ahmadu Bello University, Zaria, Nigeria, Zaria, Kaduna State, Nigeria

PC191 Comparison of Salivary Cortisol Levels in Normal and Severely Depressed Patients
Qudsia U. Khan
Physiology, CMH Medical and Dental College, Lahore, Punjab, Pakistan

PC193 An emerging role for the regulatory factor ZFHX3 in growth and energy balance.
Rebecca Dumbell1, Ashleigh G. Wilcox1, Gareth Banks1, Nora Bourbia1, 2, Liz Bentley1, Michael Parsons1, Perry Barrett3, Patrick M. Nolan1
1Mammalian Genetic Unit, MRC Harwell Institute, Didcot, Oxon, United Kingdom, 2Public Health England, Harwell Campus, Didcot, United Kingdom, 3The Rowett Institute, University of Aberdeen, Aberdeen, United Kingdom

PC195 Comparative Evaluation of Anti-hyperglycaemic Activity of Different Fractions of Methanolic Root Extract of Sanseviera liberica.
OMOWUNMI S. AMAO1, Oluwatoyin M. Sofidiya2, Adeduni W. Olusanya1
1Pharmacology, Therapeutics, and Toxicology, College of Medicine, University of Lagos, Surulere, Lagos, Nigeria, 2Pharmacognosy, Faculty of Pharmacy, University of Lagos, Surulere, Lagos, Nigeria

PC197 Inhibition of chemerin/CMKLR1 axis in the hypothalamus reduces body weight and food intake
Gisela Helfer1, Sriharsha Kantamneni2, Klaus Pors2, Qing-Feng Wu3
1School of Chemistry and Biosciences, University of Bradford, Bradford, United Kingdom, 2School of Pharmacy and Medical Sciences, University of Bradford, Bradford, United Kingdom, 3Institute of Genetics and Developmental Biology, Chinese Academy of Sciences, Beijing, China

PC199 Neuropeptide B increases proliferation and differentiation of white and brown rat preadipocytes in vitro
Tatiana Wojciechowicz1, Maria Billert1, Sandra Kazmierczak2, Mariami Jasaszwili1, Marek Skrzypski1, Krzysztof W. Nowak1
1Department of Animal Physiology and Biochemistry, Poznan University of Life Sciences, Poznan, Poland, 2Institute of Zoology, Poznan Uniwersity of Life Sciences, Poznan, Poland

PC201 Human placental DNA methylation is associated with infant size at birth and at three months, but is not altered by maternal metformin therapy.
Liu Yang1, Jon Manning2, Marian Aldhous3, Fiona Denison3, Jane Norman3, Amanda Drake1, Rebecca Reynolds1
1University/British Heart Foundation Centre for Cardiovascular Science, Queen's Medical Research Institute, University of Edinburgh, Edinburgh, United Kingdom, 2Edinburgh Genomics, University of Edinburgh, Edinburgh, United Kingdom, 3MRC Centre for Reproductive Health, Queen's Medical Research Institute, University of Edinburgh, Edinburgh, United Kingdom

PC203 The physiological conundrum of inorganic phosphate stimulation of urinary ammonium excretion in the acidotic rabbit
Patrick A. Walsh1, Daniel J. O'Donovan2
1Physiology, School of Medicine, RCSI Bahrain, Manama, Bahrain, 2Physiology, National University of Ireland Galway, Galway, Ireland

PC205 The protective role of Sestrin2 in high fat diet-induced nephropathy
Duck Y. Lee2, Yves Gorin2, Assaad Eid3, Kumar Sharma2, **Abdelali Agouni**1
1College of Pharmacy, Qatar University, Doha, Qatar, 2Center for Renal Precision Medicine, Division of Nephrology, Department of Medicine, School of Medicine, University of Texas Health Sciences Center at San Antonio, San Antonio, Texas, United States, 3Faculty of Medicine, American University of Beirut, Beirut, Lebanon

Neuroscience Poster Communications Session A

PC207 Neurotransmission in mouse intrinsic cardiac ganglia in situ
Alexander A. Harper1, 2, David J. Adams2
1Life Sciences, University of Dundee, Dundee, United Kingdom, 2Illawarra Health & Medical Research Institute (IHMRI), University of Wollongong, Wollongong, New South Wales, Australia

PC208 Hypothalamic and mesencephalic regions involved in the control of laryngeal activity and subglottic pressure in spontaneously breathing anaesthetized rats
Marta Gonzalez-Garcia1, 3, Manuel Victor Lopez-Gonzalez1, 3, Laura Carrillo-Franco2, Cristina Carrillo-Franco2, Marc Stefan Dawid-Milner1, 3
1Departamento de Fisiologia Humana, Universidad de Malaga, Malaga, Spain, 2Facultad de Pscologia y Logopedia, Universidad de Malaga, Malaga, Spain, 3Unidad de Neurofisiología del Sistema Nervioso Autónomo (CIMES), Universidad de Malaga, Malaga, Spain

PC209 Characterizing diurnal rhythms of gene expression in sympathetic preganglionic neurones
Christian Nathan1, **James Deuchars**1, Susan Deuchars1, Julie Aspden2
1Faculty of Biological Sciences, School of Biomedical Sciences, University of Leeds, Leeds, United Kingdom, 2School of Molecular and Cellular Biology, University of Leeds, Leeds, United Kingdom

PC211 The first presentation of dementia with psychosis after a systemic inflammation: a neurophysiological explanation
Carlo Lazzari, Thimmaiah Rajanna, Abdul Nusair, Thomas Rance
Psychiatry, South-West Yorkshire NHS Turst, Wakefield, United Kingdom

PC213 Microchamber arrays for delivery of bioactive compounds: functional testing of cargo release on-demand.
Olga Kopach1, Olga A. Sindeeva2, 3, Kaiyu Zheng1, Gleb B. Sukhorukov2, Dmitri A. Rusakov1
1Department of Clinical and Experimental Epilepsy, Queen Square Institute of Neurology, University College London, London, United Kingdom, 2School of Engineering and Materials Science, Queen Mary University of London, London, United Kingdom, 3Remote Controlled Theranostic Systems Laboratory, Saratov State University, Saratov, Russian Federation

PC215 Neuroprotective Potentials of Carica papaya Leaves on Lipopolysaccharide-induced Neuroinflammation in Wistar Rats
Gbenga S. Olayinka, Olukayode O. Akande, Goke F. Ibironke, Adetunji S. Onasanwo
Department of Physiology, University of Ibadan, Ibadan, Oyo, Nigeria

PC217 Accelerated Maturation of Human iPSC-derived Cortical and Sensory Neurons
Steven D. Broadbent, Sebastien Gillotin, Daniel Rock, Stuart Prime
Axol Bioscience Ltd, Cambridge, United Kingdom

PC219 Anti-neuroinflammatory potentials of Waltheria americana leaf in experimental animals
IDOWU O. OWEMIDU1, 2, Adetunji S. Onasanwo2, Abayomi Ajayi3
1Physiology, Kogi State University, Anyigba, Kogi, Nigeria, 2Physiology, University of Ibadan, Ibadan, Oyo, Nigeria, 3Pharmacology and Therapeutics, University of Ibadan, Ibadan, Oyo, Nigeria

PC221 A method for increasing experimental efficiency whilst maintaining statistical power: application to electrophysiological recordings from rodent optic nerve
Angus M. Brown, Laura R. Rich
School of Life Sciences, University of Nottingham, Nottingham, Nottinghamshire, United Kingdom

PC223 Kolaviron protects rats from cognitive decline induced by lipopolysaccharide in rats
Adetunji S. Onasanwo
Physiology, University of Ibadan, Ibadan, Oyo, Nigeria

PC225 Honey offers neuroprotective benefit against Paraquat-induced experimental Parkinson's Disease in Wistar rats.
Rasheed O. Oladejo, Adetunji Onasanwo
Physiology, University of Ibadan, Ibadan, Oyo, Nigeria

PC227 Disruption of neurovascular coupling in a rodent model of vascular dementia – impact on cognition and rescue by nitrate supplementation
Cátia F. Lourenço Marques1, 2, João Gonçalves1, 2, João Laranjinha1, 2
1Center for Neuroscience and Cell Biology, University of Coimbra, Coimbra, Portugal, 2Faculty of Pharmacy, University of Coimbra, Coimbra, Portugal

PC229 Endogenous 5-HT promotes higher number of proliferating cell in hippocampus, brainstem and spinal cord but it is not mediated by 5-HTR4
Nurhafizah Ghani, Katie Greenin, Grace Ford, Isabella Kearns, Alice van der Schoot, James Deuchars, Susan Deuchars
University of Leeds, Leeds, West Yorkshire, United Kingdom

PC231 PrRP/GPR10 mutant mice are prone to obesity but have low blood pressure
Claire H. Feetham, Simon Luckman
University of Manchester , Manchester, United Kingdom

PC233 The effect of photoperiod and high fat diet on the cognitive response in photoperiod-sensitive F344 rats
Gisela Helfer1, Samantha Mclean2
1School of Chemistry and Biosciences, University of Bradford, Bradford, United Kingdom, 2School of Pharmacy and Medical Sciences, University of Bradford, Bradford, United Kingdom

PC235 Role of glucocorticoids in the transmission of gestational stress signals from mother to foetus
Sze Ying1, 2, Joana Fernandes1, 2, Paula Brunton2, 1
1Roslin Institute, The University of Edinburgh, Edinburgh, United Kingdom, 2Centre for Discovery Brain Sciences, The University of Edinburgh, Edinburgh, United Kingdom

PC237 Activation of the expiratory muscles via lower thoracic high frequency spinal cord stimulation (HF-SCS) in intact non-anesthetized animals.
Anthony F. DiMarco2, Krzysztof E. Kowalski1
1Medicine / Physical Medicine & Rehabilitation, Case Western Reserve University/MetroHealth Medical Center/Louis Stokes Cleveland VAMC, Cleveland, Ohio, United States, 2Department of Physical Medicine and Rehabilitation, Case Western Reserve University, MetroHealth Medical Center, Cleveland, Ohio, United States

PC239 What if Parkinson's Disease Symptoms are cortical?
Gordon W. Arbuthnott
Brain Mechanisms for Behaviour, OIST Graduate University, Onna-son, Okinawa, Japan

PC241 Increased Expression of Transient Receptor Potential Vanilloid 1 Receptors in Zymosan-induced Inflammatory Pain Model in Absence Epileptic WAG/Rij Rats
Ahmet Ayar, Eda Nur Saral, Zafer Sahin, Aysegul Kurt, Asiye Malkoc
Physiology, Karadeniz Technical University, Trabzon, Turkey

Vascular & Smooth Muscle Physiology Poster Communications Session A

PC243 Monocytic-Wnt5a Dependent Impaired Revascularisation Is SRPK1 Dependent
Sohni Ria Bhalla1, Keerthana Rajaji1, Claire Allen1, Zoe Blackley1, Jennifer Batson2, Jonathan Morris3, David O. Bates1, 2
1Tumour and Vascular Biology Laboratories, The University of Nottingham, Nottingham, United Kingdom, 2Exonate Ltd, Cambridge, United Kingdom, 3School of Chemistry, University of New South Wales, Sydney, United Kingdom

PC247 Dysmenorrhea relieved by the interactions of human body anatomical axes indicate an anti-inflammatory effect by normalization of tissue function
Ming Cheh Ou1, Dennis Ou2, Chung Chu Pang3
1Obs & Gyn, Taipei City Hospital, Taipei City, Taiwan, 2Mechanical Engineering and Biomedical Engineering, Carnegie Mellon University, Pittsburgh, Pennsylvania, United States, 3Occupational therapy, National Taiwan University, Taipei City, Taiwan

PC249 Maternal RBC alloantibodies in Pregnancy
Rose Mary J. Vatakencherry1, Saraswathy L1, Veena S2, Radhamany K3
1Physiology, Amrita Institute of Medical Sciences;Kochi:Kerala;India, Kochi, Kerala, India, 2Transfusion Medicine, Amrita Institute of Medical Sciences;Kochi:Kerala;India, Kochi, Kerala, India, 3Obstetrics, Amrita Institute of Medical Sciences;Kochi:Kerala;India, Kochi, Kerala, India

PC251 C60 fullerenes as novel blockers of MaxiK channels in smooth muscle myocytes
Mariia I. Melnyk1, 2, Irina V. Ivanova2, Dariia O. Dryn1, 2, 3, Yuriy I. Prylutskyy3, Vasyl V. Hurmach3, Maxim Platonov4, Lina Al Kury5, Uwe Ritter6, Anatoly I. Soloviev2, **Alexander V. Zholos**3
1A.A. Bogomoletz Institute of Physiology, Kyiv, Ukraine, 2Institute of Pharmacology and Toxicology, Kyiv, Ukraine, 3ESC "Institute of Biology and Medicine", Taras Shevchenko National University of Kyiv, Kyiv, Ukraine, 4Institute of Molecular Biology and Genetics, Kyiv, Ukraine, 5College of Natural and Health Sciences, Zayed University, Abu Dhabi, United Arab Emirates, 6Technical University of Ilmenau, Institute of Chemistry and Biotechnology, Ilmenau, Germany

PC253 Sex Differences in Cerebral Perfusion during Insulin-Glucose Challenge
Katrina J. Carter1, Aaron Ward1, Oliver Wieben4, Marlowe W. Eldridge2, Scott A. Hagen2, Benjamin J. Walker3, Jeffrey W. Lee3, Awni M. Al-Subu2, William G. Schrage1
1Kinesiology, University of Wisconsin-Madison, Madison, Wisconsin, United States, 2Pediatrics, University of Wisconsin-Madison, Madison, Wisconsin, United States, 3Anesthesiology, University of Wisconsin-Madison, Madison, Wisconsin, United States, 4Radiology, University of Wisconsin-Madison, Madison, Wisconsin, United States

PC255 In situ dynamic structure of Rab46 – a novel endothelial protein.
Sabina D. Wiktor, David Beech, Lynn McKeown, Alexander Breeze
University of Leeds, Leeds, United Kingdom

PC257 A novel GTPase protein (Rab46) regulates differential trafficking of Weibel-Palade bodies
Katarina Miteva, Lucia Pedicini, David Beech, Lynn McKeown
Medicine & Health, University of Leeds, Leeds, United Kingdom

PC259 Heterogeneity in the endothelium enables parallel processing of multiple stimuli
Matthew D. Lee, Calum Wilson, John G. McCarron
University of Strathclyde, Glasgow, United Kingdom

PC261 Transcutaneous oxygen pressure relation to skin blood flow and oxygen consumption in recovery after submaximal exercise
nejka potocnik1, polona potocnik2
1Institute of Physiology, University of Ljubljana, Medical faculty, Ljubljana, Slovenia, 2University of Ljubljana, Medical faculty, Ljubljana, Slovenia

PC263 Purinergic involvement in the regulation of placental vasculature
Paul Fodor, Benjamin White, Raheela Khan
Division of Medical Sciences and Graduate Entry Medicine, The University of Nottingham, Derby, Derbyshire, United Kingdom

PC265 Proteomic signatures of human placental vascular maturation
Pawel Palmowski1, Achim Treumann1, Rachael Watson1, Julie Taggart1, Stephen Robson2, Nicholas Europe-Finner1, **Michael Taggart**1
1Institute of genetic Medicine, Newcastle University, Newcastle upon Tyne, United Kingdom, 2Institute of Cellular Medicine, Newcastle University, Newcastle upon Tyne, United Kingdom

PC301 Haematological and serum biochemical indices of broiler chickens fed Delonix regia seeds
Abdulwahid Ajibola, Kaduna State University, Nigeria

PC303 Imatinib mesylate induces necroptotic cell death while also inducing autophagy in cardiac progenitor cells.
Robert Walmsley Andrew J. Smith, University of Leeds, United Kingdom

PC305 Myocardial ischemia induces sub-cellular remodelling of intracellular calcium uptake in cardiac Purkinje fibers
Gilles Bru-Mercier, IHU-Liryc/University of Bordeaux/INSERM, France

PC307 Ventilatory efficiency is reduced in hypertensive humans during maximal exercise
Benjamin Chant, University of Bristol, United Kingdom

PC309 Effect of co-administration of vitamins C and E on reserpine-induced motor and cognitive impairments and oxidative stress
Timothy Danboyi, Kaduna State University, Nigeria

PC311 Availability of a commercial liposomal vitamin B12 supplement in healthy participants
Gethin Evans, Manchester Metropolitan University, United Kingdom

PC313 PTP1B inhibitor for improved diabetic wound healing
Gerda Gasiunaite, University of Aberdeen, United Kingdom

PC315 Sub-Cellular Heterogeneity Determines Spatial Calcium Dynamics in Cardiomyocytes
Maxx Holmes, University of Leeds, United Kingdom

PC317 The effects of Emetine-based antimalarial leads on intracellular calcium handing and contractility in sheep ventricular myocytes
Matthew Jones, University of Salford, United Kingdom

PC319 Regulation of Human Activated Pancreatique Stellate Cells proliferation by TRPM7 channels
THIBAUT LEFEBVRE, Laboratoire de Physiologie Cellulaire et Moléculaire LPCM-EA4667-UPJV, France

PC321 A fluorescent microbiota for live-imaging of host-bacterium dynamics in C. elegans
Jack Martin, Lancaster University, United Kingdom

PC323 The effects of fasted and non-fasted exercise at different times of the day in healthy males
Victoria McIver, Manchester Metropolitan University, United Kingdom

PC327 Beneficial effect of runnning wheel exercise in rats with aortic constriction
Hakam Nazir, University of Leeds, United Kingdom

PC329 Effect of Raja yoga meditation on cardiopulmonary parameters in type 2 Diabetes mellitus
Mrunal Phatak, All India Institute of Medical Sciences Nagpur, India

PC331 The Veterans Specific Activity Questionnaire as a Patient Reported Outcome Measure in Pulmonary Disease
Rahul Sethi, Imperial College London, United Kingdom

PC333 The FPR2 ligand W-peptide: a new therapeutic approach to treat atherosclerosis.
Dawn Thompson, University of Aberdeen, United Kingdom

PC335 The effect of ageing on optogenetically evoked Giant Fibre System (GFS) escape behaviours in Drosophila melanogaster.
Alice Witney, Trinity College Dublin, Ireland

PC337 Inflammatory responses following left and right coronary arterial reperfusion in myocardial infarction patients
Yin Hua Zhang, Seoul National University, South Korea

Annual Public Lecture

This lecture brings some of the most exciting and outstanding physiological research to the public. It's designed to raise the awareness of physiology and illustrate its importance to all audiences, particularly schools.

Monday, 8 July • 18:00 – 18:45
Boyd Suite, Ground Floor

Lora Heisler, University of Aberdeen, UK

PL02 Hunger Games - The Control of Appetite

Lora Heisler, Ph.D. is Chair in Human Nutrition at the Rowett Institute, University of Aberdeen, Scotland, where she directs the Obesity and Food Choice research theme. Professor Heisler received her B.A. from Boston University, M.Sc. from London School of Economics and Political Sciences and Ph.D. from Tufts University. She undertook postdoctoral fellowships at the University of California at San Francisco and Beth Israel Deaconess/ Harvard Medical School. Professor Heisler began her independent research group in 2001 at Harvard Medical School, she relocated her group to the University of Cambridge in 2004 and they then joined the Rowett Institute in 2013. In 2016, Professor Heisler was elected to the Royal Society of Edinburgh, Scotland's national academy of science and letters.

The Heisler laboratory investigates the brain circuits underlying energy balance and glucose homeostasis in an effort to identify new targets amenable for obesity and type 2 diabetes treatment. Her seminal research discoveries in this area have been acknowledged by Outstanding Scientific Achievement prizes from the Obesity Society and the American Diabetes Association. Her talk will describe their latest discoveries defining new brain circuits that control food intake and physical activity.

Welcome Reception

Monday, 8 July from 19:00 – 20:00

Main Arena, Ground Floor

Join us for a drink, and network with colleagues in an informal atmosphere with a traditional Scottish piper!

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The Physiological Society

WILEY

09:00 Joan Mott Prize Lecture

Mind the gap: connexins and cell communication in the kidney

Claire Hills, University of Lincoln, UK — Boyd Suite

10:00 Symposia

Bionic women and men — Gordon A Suite

Contribution of microcirculation to development of chronic heart-failure — Fleming Auditorium

Neuroglial responses to oxygen deprivation — Boyd Suite

10:00 Oral Communications

Cardiac & Respiratory B — Crombie B Suite

Epithelia & Membrane Transport B — Crombie A Suite

Metabolism & Endocrinology B — Gordon B Suite

11:30 Refreshment break

12:00 Hodgkin-Huxley-Katz Prize Lecture

Allosteric modulation of glutamate receptors

Stephen Traynelis, Emory University, USA — Boyd Suite

13:00 Lunch

13:15 - 14:15 Professional development sessions

What's statistics good for? — Crombie B Suite

LGBT and The Society: promoting inclusivity — Crombie A Suite

Teaching Physiology: How to configure your lab with engaging lessons, metabolic activity, and biopotential measurements — The Balmoral Suite

Animals and Openness — Gordon B Suite

14:30 Symposia

Brown adipose tissue – the fat that makes you thin — Boyd Suite Circadian

rhythms in cardiac function — Fleming Auditorium

Lung epithelial stem cells in human lung homeostasis and disease — Gordon A Suite

14:30 Oral Communications

Education & Teaching B — Crombie B Suite

Human & Exercise Physiology B — Crombie A Suite

Neuroscience B — Gordon B Suite

Vascular & Smooth Muscle Physiology B — The Balmoral Suite

16:00 Poster Session B — **Main Arena**

16:45 Rob Clarke Awards 2019: awards ceremony — **Main Arena**

18:00 Annual Review Prize Lecture

Circuits Solutions for Programming Actions

Silvia Arber, University of Basel, Switzerland — Boyd Suite

19:30 Society Dinner

Joan Mott Prize Lecture

This is an exciting biennial lecture with a focus on the women in physiology, and is usually also given by a female physiologist.

Tuesday, 9 July • 09:00 – 9:45
Boyd Suite, Ground Floor

Claire Hills, University of Lincoln, UK

Mind the gap: connexins and cell communication in the kidney

Claire Hills began her career as a Biochemist at the University of Kent before joining Warwick University to complete her PhD in renal complications of diabetes (2002-6). She spent 3yrs at the University of Leicester with Professor Nigel Brunskill where she worked on an MRC funded project investigating the reno-protective effects of C-peptide. Work that received the Nick Hales Awarded from Diabetes UK in 2010. Dr Hills returned to Warwick as a Wellcome Trust VIP Fellow in 2011 before securing independence through a Diabetes UK support grant examining cell-to-cell communication in kidney. Now Associate Professor (Reader) at the University of Lincoln, Dr Hills is internationally recognised for her seminal work in cell-cell interactions in the kidney and has received continuous support from the European Foundation for the Study of Diabetes (EFSD), Diabetes UK, the Diabetes Research and Wellness Foundation (DRWF) as well as other internationally recognised funding agencies.

For publication in *Experimental Physiology*

Experimental Physiology
A Publication of The Physiological Society
EP

Bionic women and men – Physiology lessons from implantable cardiac devices

Tuesday, 9 July • 10:00 – 11:30
Gordon A Suite, First Floor

Organiser: Barry McDonnell, Cardiff Metropolitan University, UK
Co-organiser: John Cockcroft, Cardiff Metropolitan University, UK

Speakers

10:00 Eric Stöhr, Cardiff Metropolitan University, UK
SA021 Current state and outstanding mechanisms in normal arterial physiology – lessons from implantable cardiac devices

10:30 Hannah Rosenblum, Columbia University Irving Medical Center, USA
SA022 Increased aortic stiffness in continuous-flow left ventricular assist device patients is associated with higher rates of adverse events

10:45 Manreet Kanwar, Allegheny General Hospital, Pittsburgh, USA
SA023 Right ventricular function in patients with pulmonary hypertension - The devil is in the details

11:00 William Cornwell, University of Colorado Anschutz Medical Campus, USA
SA024 Cardiovascular, cerebrovascular and exercise pressor reflexes in the bionic man

For publication in *Experimental Physiology*

Experimental Physiology
A Publication of The Physiological Society

Contribution of microcirculation to development of chronic heart-failure

Tuesday, 9 July • 10:00 – 11:30
Fleming Auditorium, Ground Floor

Organiser: Andreas Beyer, Medical College of Wisconsin, USA
Co-organiser: Petra Kleinbongard, University of Essen, Germany

Speakers

10:00 Amanda Jo LeBlanc, University of Louisville, USA
SA025 The coronary microcirculation in advancing age: Does aging set up the development of heart failure

10:30 Vahagn Ohanyan, Northeast Ohio Medical University, USA
SA026 Is heart failure a coronary microvascular disorder?

10:45 Christian Baer, University of Hannover, Germany
Role of non-coding RNAs in development of heart failure

11:00 Daphne Merkus, University of Utrecht, Netherlands
SA027 Coronary microcirculation in left and right heart failure

Sponsored by the American Physiological Society

Neuroglial responses to oxygen deprivation

Tuesday, 9 July • 10:00 – 11:30
Boyd Suite, Ground Floor

Organiser: Ruoli Chen, Keele University, UK
Co-organiser: Mark Dallas, University of Reading, UK

Speakers

10:00 Arshad Majid, University of Sheffield, UK
The therapeutic potential of oxygen deprivation in neurological and vascular diseases

10:30 Lola Martin-de-Saavedra, Northwestern University, USA
SA028 Mechanisms of increased vulnerability to oxygen and glucose deprivation in astroglia carrying Alzheimer's disease mutations

10:45 Ayesha Singh, Keele University, UK
SA029 Ischaemic preconditioning of primary rat neural cultures induces tolerance to subsequent ischaemic insult (oxygen-glucose deprivation)

11:00 Barry McColl, University of Edinburgh, UK

Cardiac & Respiratory Physiology B

Tuesday, 9 July • 10:00 – 11:30
Crombie B Suite, Ground Floor

10:00 Samantha Salvage, University of Cambridge, UK
C007 Increased cytoplasmic Ca2+ sensitivity of cardiac ryanodine receptors from the arrhythmic RyR2-P2328S mouse is independent of adrenergic challenge and FKBP12/12.6 regulation

10:15 Jinheng Lin, Newcastle University, UK
C008 Cigarette Smoke Activates Calcium Influx in Human Airway Smooth Muscle Cells

10:30 Adam Causer, University of Portsmouth, UK
C009 Cystic fibrosis-transmembrane conductance regulator limits F-actin formation and promotes morphological alignment with flow in human lung microvascular endothelial cells

10:45 Katrina Hope, University of Bristol, UK
C010 Carotid body chemosensitivity is enhanced during moderate exercise in human hypertension

11:00 Hiba AbouDaya, LPCM-EA46-67, Université Picardie Jules Vernes, France
C011 Orai3 expression increases during chemotherapy in lung adenocarcinoma and is involved in resistance to chemotherapy

11:15 Silvia V Conde, NOVA Medical School, Portugal
C012 Adjustments in purinergic metabolism maintain the contribution of adenosine and ATP to carotid body chemosensory activity in ageing

Epithelia & Membrane Transport B

Tuesday, 9 July • 10:00 – 11:30
Crombie A Suite, Ground Floor

10:00 Jessica Ivy, University of Edinburgh, UK
C043 GR activation stimulates NCC and determines diurnal rhythm of its phosphorylation

10:15 Mia Shandell, University of York, UK
C044 Ionic modulation of immune checkpoint proteins

10:30 Vinciane Saint-Criq, Newcastle University, UK
C045 Targeting proton secretion in CF airway epithelial cells to help restore airway pH homeostasis

10:45 Sean Gettings, Newcastle University, University of Leuven, UK
C046 Epithelial sodium channels containing the δ-subunit operate under high extracellular sodium concentrations

11:00 Chongliang Zhong, University College Dublin, Ireland
C047 Localization of UT-B and AQP3 in developing bovine rumen epithelium

11:15 Archana Kini, Hannover Medical School, Germany
C048 Alterations in the colonic microbiome and age-dependent changes in stool water content, mucus production, mucosal inflammation and survival in Slc26a3 (DRA)-deficient mice and wt-littermates

Metabolism & Endocrinology B

Tuesday, 9 July • 10:00 – 11:30
Gordon B Suite, First Floor

10:00 Brendan Gabriel, Karolinska Institutet, Sweden
C079 Altered inner-mitochondrial membrane dynamics disrupt skeletal muscle core-clock gene expression in type 2 diabetes

10:15 Robert Jones, University of Nottingham,
C080 UK Effects of two-weeks of time restricted feeding on basal and postprandial metabolism in healthy men

10:30 Emma Sweeney, Northumbria University, UK
C081 Can acute exercise alleviate the impairment in glucose regulation after sleep restriction in healthy humans? A randomised crossover trial

10:45 Jonathon Smith, Karolinska Institutet, Sweden
C082 HES1 expression is positively regulated by glycaemic challenges and exercise, and is perturbed in the skeletal muscle of type 2 diabetic individuals

11:00 Pardeep Pabla, University of Nottingham, UK
C083 Targeted metabolomics in human skeletal muscle and plasma reveals distinct differences in key biomarkers of Type 2 diabetes

11:15 Katie Davies, University of Cambridge, UK
C084 Endocrine regulation of fetal mitochondrial density in skeletal muscle and liver in fetal sheep

Hodgkin-Huxley-Katz Prize Lecture

A prestigious biennial lecture awarded to distinguished physiologists working outside the United Kingdom or Republic of Ireland. This lecture celebrates the international impact of the work of Alan Hodgkin, Andrew Huxley and Bernard Katz.

Tuesday, 9 July • 12:00 – 12:45
Boyd Suite, Ground Floor

Stephen Traynelis, Emory University, USA

PL03 Allosteric modulation of glutamate receptors

Dr. Stephen Traynelis is a Professor of Pharmacology at the Emory University School of Medicine in Atlanta, GA. He received a BS from West Virginia University in Chemistry (1984, summa cum laude) and a Ph.D. in Pharmacology from the University of North Carolina (1988). He completed postdoctoral fellowships at University College London and the Salk Institute. Dr. Traynelis has made numerous seminal discoveries about the fundamental properties of glutamate receptors, especially NMDA receptors. More recently, he has developed multiple first-in-class series of subtype-selective NMDA receptor allosteric modulators that possess therapeutic potential for the treatment of ischemic brain injury, schizophrenia, Parkinson's Disease, epilepsy and other disorders. This led to the founding of NeurOp Inc and the development of neuroprotective agents, one of which is currently being evaluated in clinical trials. Dr. Traynelis' efforts to understand the functional consequences of genetic variation in glutamate receptor genes (GRIN, GRIA, GRIK, GRID) in healthy individuals and neurological patients have provided new insights into receptor function and genetic risk factors. These efforts led to the founding of a new Center at Emory that bridges the gap between genetic information on receptor variants and their functional and pharmacological consequences, laying the groundwork for precision medicine and the evaluation of novel treatment paradigms.

For publication in *The Journal of Physiology*.

The Journal of Physiology

Tuesday, 9 July • 13:00 – 14:30
Main Arena, Ground Floor
Lunch

Tuesday, 9 July • 13:15 – 14:15
Teaching Physiology: How to configure your lab with engaging lessons, metabolic activity, and biopotential measurements
The Balmoral Suite, Ground Floor
Life science educators aspire to deliver engaging lessons that enable students to obtain a high degree of knowledge while building a confident commitment to learning. This workshop will demonstrate the best way to set up your lab to improve student engagement while saving time. The workshop will include an overview of experiments, lesson workflow, lesson customization, live recordings of metabolic and biopotential data, and tips for an optimal experience for both students and educators.

Speakers:
Alex Dimov, BIOPAC Systems, Inc.
Steve Clifford, BIOPAC UK
Robert Jones, BIOPAC UK

LGBT and The Society: Promoting inclusivity
Crombie A Suite, Ground Floor
This workshop presents an opportunity for Members to come together and discuss the inclusion of LGBT people within The Society. This interactive session will involve group work and will explore the experiences of LGBT people in the UK. We will examine the different ways The Society can ensure that LGBT people are included throughout the organisation.

Speakers:
Jake Laws, Stonewall Scotland, UK

What's statistics good for?

Crombie B Suite, Ground Floor

The session will explore different aspects of how statistics are used and abused. Patricia de Winter will focus on various ways of reporting risk and what the statistics actually mean in her talk title: "Figures often beguile me", (Mis)reporting of Science and Health Statistics in the Media. This will be followed by Gordon Drummond giving practical advice about using statistical tests in his talk titled: What exactly can my test tell me – and do I need to test at all? Finally Peter Cahusac will briefly present an alternative way of looking at statistical evidence in: The Likelihood of Evidence-based Statistics.

Speakers:

Gordon Drummond, Edinburgh University, UK
Peter Cahusac, Alfaisal University, Riyadh, Saudi Arabia

Animals and Openness: A researcher's guide to transparency around animal research

Gordon B Suite, First Floor

The use of animals in research has long-been considered a difficult and controversial issue, where discussion with people outside a research setting can lead to challenging discussions, and even argument and conflict. Over the past 10 years this view of animal research in physiology has changed as the research sector has become increasingly open, with more information about research practices and husbandry available in the public domain. This session will look at how this change has come about, and what it means for the physiologist community; drawing on recent public opinion data and current communication practices in the academic and commercial sector. The session will also explore some of the usual questions asked by lay people about using animals in research, providing tips, techniques and underlying principles for answering those questions authoritatively and openly.

Speakers:

Bella Williams, Head of Engagement, Understanding Animal Research, UK

Brown adipose tissue – the fat that makes you thin

Tuesday, 9 July • 14:30 – 16:00
Boyd Suite, Ground Floor

Organiser: Michael Symonds, University of Nottingham, UK

Speakers

14:30 Barbara Cannon, Stockholm University, Sweden
Brown adipose tissue and heat production

15:00 Virginie Sottilie, University of Nottingham, UK
SA030 Stem cell-based modelling of brown adipogenesis

15:15 Mark Christian, Warwick University, UK
SA031 Elucidation of the roles of brown and BRITE fat genes

15:30 Martin Klingenspor, Technical University of Munich, Germany
SA032 The gut hormone secretin triggers a gut-brown fat–brain-axis in the control of food intake

For publication in *Experimental Physiology*

Experimental Physiology
A Publication of The Physiological Society
EP

Circadian rhythms in cardiac function

Tuesday, 9 July • 14:30 – 16:00
Fleming Auditorium, Ground Floor

Organiser: Hugh Piggins, University of Bristol, UK

Speakers

14:30 Mark Boyett, University of Manchester, UK
SA033 Circadian rhythm in heart rate – role of intrinsic versus extrinsic factors

15:00 Carol Bussey, University of Otago, New Zealand
SA034 Direct recordings of cardiac sympathetic and vagal parasympathetic nerve activity to clarify the underlying mechanisms of circadian heart rhythm

15:15 Yanwen Wang, University of Manchester, UK
SA035 Effect of disruption of the normal circadian rhythm on the heart

15:30 Martin Young, University of Alabama at Birmingham, USA
SA036 Circadian rhythms in the heart

For publication in *The Journal of Physiology*

The Journal of Physiology

Lung epithelial stem cells in human lung homeostasis and disease

Tuesday, 9 July • 14:30 – 16:00
Gordon A Suite, First Floor

Organiser: James Garnett, Newcastle University, UK

Speakers

14:30 Emma Rawlins, Wellcome - MRC Cambridge Stem Cell Institute, UK
SA037 Cell-cell interactions in normal human lung development

15:00 Eva Schruf, Boehringer Ingelheim, Germany
SA038 IPF-relevant cytokine cocktail induces a shift from alveolar to airway-like epithelial cells in an iPSC-derived model of alveolar epithelial progenitor differentiation

15:15 Chen Ya-Wen, University of Southern California, USA
SA039 Unlimited expansion of putative distal lung bud tip progenitor cells from human pluripotent stem cells and their ex vivo and in vivo engraftment

15:30 Jason Rock, Boston University School of Medicine, USA
SA040 Macrophages and fibroblasts as niches in the adult lung

Education & Teaching B

Tuesday, 9 July • 14:30 – 16:00
Crombie B Suite, Ground Floor

14:30 Sean Roe, The Queen's University of Belfast, UK
C025 Transforming physiology tutorials for medical students through transdisciplinary collaboration with drama studies; taking the physiology tutorial case from the page to real life

14:45 Jenny Gregory, University of Aberdeen, UK
C026 Image fraud and confidentiality as vehicles for learning about ethical issues in medical science teaching, a pilot study

15:00 Elizabeth Sheader, University of Manchester, UK
C027 Are Human Volunteer Practicals Essential for First Year Undergraduates Studying Human Physiology?

15:15 Michelle Keown, University of Manchester, UK
C028 Increasing public engagement opportunities for final year physiology focused science communication projects

15:30 Mark Rae, University College Cork, Ireland
C029 Do pre-clinical medical students prefer summative or formative evaluations in physiology?

15:45 Harry Witchel, Brighton and Sussex Medical School, UK
C030 A Video on the Pathophysiology of Heart Failure for Reinforcing First Year Medical Students' Learning: Do Video Techniques that Break from Medical Education Tradition Undermine the Video

Human & Exercise Physiology B

Tuesday, 9 July • 14:30 – 16:00
Crombie A Suite, Ground Floor

14:30 Audrey Smets, University of Bristol, UK
C055 Do the peripheral chemoreceptors contribute to exercise blood pressure in people with a family history of hypertension?

14:45 Hannah Church, Liverpool John Moores University, UK
C056 Longer Home-based HIIT intervals elicit a greater improvement in aerobic capacity – a 6-week intervention study

15:00 Tanvir Sian, University of Nottingham, Royal Derby Hosital, UK
C057 Four-weeks, equipment-free, high-intensity interval training (HIIT) elicits improvements in the cardiorespiratory fitness and body composition of older adults irrespective of exercise supervision

15:15 Stefanos Volianitis, Aalborg University, Denmark
C058 During maximal exercise frontal lobe oxygenation decreases despite elevation in middle cerebral artery flow velocity

15:30 Nima Gharahdaghi, University of Nottingham, UK
C059 Exogenous testosterone therapy overcomes anabolic blunting to resistance-type exercise in older men

15:45 Alistair Black, Leeds Beckett University, UK
C060 Carbohydrate ingestion is more beneficial for time trial performance in cycling than running

Neuroscience B

Tuesday, 9 July • 14:30 – 16:00
Gordon B Suite, First Floor

14:30 Nasreen Choudhury, University of Leicester, UK
C097 Kv3.1 and Kv3.3 differentially contribute to action potential repolarization in principal neurons of the auditory brainstem

14:45 TBC

15:00 Masa Svent, University of Leicester, UK
C099 Presynaptic modulation of synaptic release and plasticity via NMDA receptor activation at the dorsal cochlear nucleus multisensory synapses

15:15 Beatrice Bretherton, University of Leeds, UK
C100 The effects of daily transcutaneous vagus nerve stimulation on autonomic tone

15:30 Yevheniia Kravenska, Nencki Institute of Experimental Biology of the Polish Academy of Sciences, Bogomoletz Institute of Physiology of the National Academy of Sciences of Ukraine, Poland
C101 Amyloid-β inhibits mitochondrial large-conductance calcium-activated potassium channel

15:45 Thomas Campbell, University College Dublin, Ireland
C102 Mapping atrial receptor distribution in the right atrial subendocardial neural plexus of the rat

Vascular & Smooth Muscle Physiology B

Tuesday, 9 July • 14:30 – 16:00
The Balmoral Suite, Ground Floor

14:30 Sarah Arrowsmith, University of Liverpool, UK
C115 The H2S-releasing NSAID, ATB-346, significantly attenuates human myometrial contraction

14:45 Peter Tickle, University of Leeds, UK
C116 Adaptive remodeling recovers impaired skeletal muscle function and microvascular perfusion after compensatory hypertrophy of the rat heart

15:00 Paul Meakin, University of Leeds, UK
C117 Increased β-amyloid production is associated with diabetes-induced vascular dysfunction

15:15 Zaher Al Bakour, University of Aberdeen, UK
C118 Phosphodiesterase 1: A Novel Drug Target for Pulmonary Arterial Hypertension

15:30 Christopher Lewis, University of Aberdeen, UK
C119 Soluble fms-like Tyrosine Kinase 1 (sFlt1) is Downregulated in Aortic Valve Stenosis, Promoting Intravalvular Neovascularisation

15:45 Aaron Ward, University of Wisconsin-Madison, USA
C120 Sex differences in basal cerebral perfusion: contribution of nitric oxide

Cardiac & Respiratory Physiology Poster Communications Session B

PC002 Acute cardiovascular responses to slow and deep breathing in healthy women
Malika Felton, Vanora Hundley, Alison K. McConnell
Bournemouth University, Poole, United Kingdom

PC004 Divergent effects of moxonidine, clonidine, and metoprolol on the fractal pattern of interbeat interval dynamics
Marian Turcani, Elham Ghadhanfar
Department of Physiology, Faculty of Medicine, Kuwait University, Kuwait, Kuwait

PC006 Amelioration of Nω-nitro-L-arginine methyl ester (L-NAME) Induced Hypertension and Cardio-renal Oxidative Stress in Rat Model by Methanol Extract of Morinda lucida Leaf.
Olumuyiwa A. Adejumobi1, Samuel Oladipo1, Temidayo Omobowale1, Ademola Oyagbemi2, Adeolu A. Adedapo3, Momoh Yakubu4
1Department of Veterinary Medicine, University of Ibadan, Ibadan, Oyo State, Nigeria, 2Department of Veterinary Physiology and Biochemistry, University of Ibadan, Ibadan, Nigeria, 3Department of Veterinary Pharmacology and Toxicology, University of Ibadan, Ibadan, Nigeria, 4Department of Environmental and Interdisciplinary Sciences, Texas Southern University, Houston, United Kingdom

PC008 Effects of beta-blocker treatment on ventilation in conscious rats before and after exposure to chronic intermittent hypoxia
Abdulaziz Alzahrani1, 2, Clare J. Ray1, Lily Cao1, KL Brain1, Prem Kumar1, Andrew Coney1, Andrew P. Holmes1
1Institute of Clinical Sciences, College of Medical and Dental Sciences, University of Birmingham, Birmingham, United Kingdom, 2Respiratory Care Department, College of Applied Medical Sciences, Umm Al-Qura University, Makkah, Saudi Arabia

PC010 The role of the S5 aromatic residue F557 in cisapride inhibition of the hERG channel, probed through mutagenesis and docking to a realistic hERG structure
YIHONG ZHANG1, Abi Sudol2, Christopher E. Dempsey2, **Jules C. Hancox**1
1School of Physiology Pharmacology and Neuroscience, University of Bristol, Bristol, United Kingdom, 2School of Biochemistry, University of Bristol, Bristol, United Kingdom

PC012 Piezo is required to buffer mechanical stress in the heart
Luigi Zechini1, **Mary Diaz**1, Paul Hartley2, Barry Denholm1
1Biomedical Sciences, Edinburgh University, Edinburgh , United Kingdom, 2Bournemouth University, Bournemouth, United Kingdom

PC014 Cardiac pacemaker dysfunction arising from different pathways of electrical remodelling in the ageing rat
Azzah. M. Algamdi1, Henggui. Zhang1
1. School of Physics and Astronomy, University of Manchester, Manchester, UK. 2. School of Physics. Jeddah University KAU, Jeddah, Saudi Arabia.
Azzah M. Alghamdi1, 2
1Biological physics group, School of Physics and Astronomy, University of Manchester, Manchester, United Kingdom, 2School of Physics, Jeddah University, Jeddah, Saudi Arabia

PC016 Inhibition of the human Ether-à-go-go-Related Gene (hERG) potassium channels by phenanthrene.
Ehab Al-Moubarak1, Holly Shiels2, YIHONG ZHANG1, Christopher E. Dempsey3, Jules C. Hancox1
1School of Physiology, Pharmacology & Neuroscience, University of Bristol, Bristol, United Kingdom, 2Division of Cardiovascular Sciences, University of Manchester, Manchester, United Kingdom, 3School of Biochemistry, University of Bristol, Bristol, United Kingdom

PC018 Revealing the dyadic ultrastructure: major differences in ryanodine receptor cluster distributions between the atria and ventricle
Lauren Toms, Jessica Caldwell, Katharine Dibb, Andrew Trafford
Cardiovascular Sciences, The University of Manchester, Manchester, United Kingdom

PC020 Hypoxic ventilatory response is not increased in young adults with stage 1 hypertension during rest or exercise
Thomas Hinton1, 2, Zoe Adams1, Katrina A. Hope1, Benjamin Chant1, Julian F. Paton3, Angus Nightingale1, 2, Emma C. Hart1
1School of Physiology, Pharmacology & Neuroscience, University of Bristol, Bristol, United Kingdom, 2Bristol Heart Institute, University Hospitals Bristol NHS Foundation Trust, Upper Maudlin Street,, Bristol, United Kingdom, 3Department of Physiology, Faculty of Medical & Health Sciences, University of Auckland, Park Road, Grafton, Auckland 1142, New Zealand, Auckland, New Zealand

PC022 Properties and role of several repolarizing potassium currents in atrial cadiomyocytes isolated from dogs in sinus rhythm and atrial fibrillation
Norbert JOST1, 2, Zsofia Nagy2, Viktor Juhasz1, Laszlo Saghy3, Istvan Baczko1, Laszlo Virag1, Andras Varro1, 2
1Department of Pharmacology and Pharmacotherapy, University of Szeged, Faculty of Medicine, Szeged, Hungary, 2Research Group of Cardiovascular Pharmacology, MTA-SZTE, Szeged, Hungary, 32nd Department of Internal Medicine amd Cardiology Center, University of Szeged, Faculty of Medicine, Szeged, Hungary

PC024 Differences in atrioventricular conduction time and ventricular depolarization and repolarization time according to age and sex
IL-YOUNG OH, JI HYUN LEE, YOUNGJIN CHO
Internal Medicine, Seoul National University Bundang Hospital, Seongnam, Gyeonggi-do, Korea (the Republic of)

PC026 High content screening of adjuvant chemotherapy in breast cancer and cancer treatment-related cardiomyopathy
Alison R. Obergrussberger1, Krisztina Juhasz1, 2, Oliver Reinhardt3, Elena Dragicevic1, Ulrich Thomas1, Matthias Beckler1, Sonja Stölzle-Feix1, Frauke Alves3, 4, Niels Fertig1
1Nanion Technologies GmbH, Munich, Germany, 2Institute for Nanoelectronics, Technische Universität München, Munich, Germany, 3Translational Molecular Imaging Group, MPI of Experimental Medicine, Göttingen, Germany, 4Clinic of Hematology and Medical Oncology, University Medical Center Göttingen, Göttingen, Germany

PC028 The effects of TNF-α and IL-1β on intracellular calcium handling and contractility in sheep ventricular myocytes
Natasha E. Hadgraft, **David J. Greensmith**
Biomedical Research Centre, University of Salford, Salford, Greater Manchester, United Kingdom

PC030 Cardiac Atrial Acidic Organelle Proteomics: A Method to Analyse Lysosomal Proteins
Thamali Ayagama1, Rebecca Capel1, Roman Fischer2, Holger Kramer3, Rebecca Burton1
1Pharmacology, University of Oxford, Oxford, United Kingdom, 2Target Discovery Institute, University of Oxford, Oxford, United Kingdom, 3Biological Mass Spectrometry and Proteomics Facility, Imperial College London, London, United Kingdom

PC032 Role Of Reactive Oxygen Species On Fibrotic Elimination And Functional Restoration In Cryoinjured Model Of Myocardial Infarction In Zebrafish
Muhammed Ibrahim Sekar, suruthi sankar, Monisha Jayabalan
Department of Anatomy, University of Madras, Chennai, Tamil nadu, India

PC034 The organisation of caveolin and cavin proteins within rat cardiac myocyte caveolae
Ruth Norman1, Thomas M. Sheard1, Ben Nichols2, Izzy Jayasinghe1, **Sarah Calaghan**1
1School of Biomedical Sciences, University of Leeds, Leeds, W Yorks, United Kingdom, 2MRC Laboratory of Molecular Biology, Cambridge, United Kingdom

PC036 Inhibition of Ca2+/calmodulin-dependent protein kinase II protects against ventricular arrhythmias during the awake period
Jade Taylor, Matthew Smith, **Yanwen Wang**, Mark R. Boyett
Cardiovascular, The University of Manchester, Manchester, United Kingdom

PC038 Aluminum Tainted Drinking Water Impacts Negatively and Differently on Antioxidant Status of Cardio-Renal Systems
Paul Akangbou1, **Arthur N. CHUEMERE**1, Datonye V. Dapper1, Ogadinma Ilochi2, Michael Anyiyeloye3
1human physiology, university of port harcourt, Port Harcourt, Rivers State, Nigeria, 2Department of Human Physiology, Madonna University, Port Harcourt, Nigeria, 3Department of Pharmacology, University of Port Harcourt, Port Harcourt, Nigeria

PC040 Effects of Tender Coconut Water on The Coronary Artery and Blood Glucose of Male Diabetic Wistar Rats
Churchill Inneh1, Vanessa Oigbochie2, Oghenakhogie Momodu2, Eseosa Adaniwmowan2
1Physiology, University of Benin, Benin City, Edo-state, Nigeria, 2Anatomy, University of Beniin, Benin city, Edo State, Nigeria

PC042 The Role of Human Ether-a-go-go-Related Gene K+ Channels in Cardiac Arrhythmias induced by Carbon Monoxide
Moza Al-Owais, NT Hettiarachchi, DS Steele, C Peers, A.V Holden, Al Benson
University of Leeds, Leeds, United Kingdom

PC044 Effects of heart failure-induced electrical remodelling on atrial arrhythmogenesis: insights from a modelling study
Nouf R. Alshwaira, Henggui Zhang
Biophysics, The University of Manchester, Manchester, United Kingdom

PC046 Differential expression of chloride ion channels between tracheal and articular cartilage.
Lina Abdul Kadir, Fiona O'Brien, Kasia Whysall, Richard Barrett-Jolley
Musculoskeletal Biology, Institute of Ageing and Chronic Disease, Liverpool, United Kingdom

PC048 Endothelin 1 mediates Aspergillus fumigatus induced airway inflammation and remodelling in mouse inhalation model
Sara Namvar1, 2, 3, Briony Labram2, 3, Tracy Hussell2, 3, Sarah Herrick2, 3
1University of Salford, Salford, Manchester, United Kingdom, 2FBMH, University of Manchester, Manchester, United Kingdom, 3Manchester Academic Health Science Centre, University of Manchester, United Kingdom

PC050 Effect of hyperglycaemia on peptide composition of in vitro airway surface liquid.
Matthew G. Biggart1, Xie Ling2, Xian Chen2, John Wrobel2, Robert Tarran3, Deborah Baines1
1Infection and Immunity, St George's University Of London, London, Surrey, United Kingdom, 2Biochemistry & Biophysics, University of North Carolina, Chapel Hill, North Carolina, United States, 3Cell Biology & Physiology, University of North Carolina, Chapel Hill, North Carolina, United States

PC052 Evaluating the impact of London's Ultra Low Emission Zone on children's respiratory health: Spirometry success rates at baseline - the CHILL Study
Harpal S. Kalsi3, Scales James3, Rosamund Dove3, Wood Helen3, Cross Louise3, Ivelina Tsocheva1, Jasmine Chavda1, Colligan Grainne3, Petrovic Kristian3, Chris Newby3, Gurch Randhawa1, Mudway Ian2, Chris Griffiths3
1University of Bedfordshire, Luton, United Kingdom, 2King's College London, London, United Kingdom, 3Queen Mary University of London, London, United Kingdom

PC054 Leptin, respiratory parameters and carotid body function in high fat diet fed and chronic intermittent hypoxic rats.
Asunción Rocher1, Elena Olea2, Ana Gordillo1, Jesus Prieto-Lloret1, Silvia V Conde3, Ricardo Rigual1, Angeles Gomez-Niño1, Ana Obeso1
1Bioquimica y Biologia Molecular y Fisiologia, University of Valladolid-CSIC, Valladolid, Spain, 2Enfermeria, Universidad de Valladolid, Valladolid, Spain, 3CEDOC, NOVA Medical School, Faculdade de Ciências Médicas, Universidade NOVA de Lisboa, Lisboa, Portugal

PC056 Characteristic markers of diabetes induce a synergistic pro-inflammatory response in porcine aortic valve interstitial cells
Jianlan Zhang, Graeme Nixon
Medical Sciences and Nutrition, Aberdeen Cardiovascular and Diabetes Centre, Aberdeen, United Kingdom

Education & Teaching Poster Communications Session B

PC058 Does size matter? Effect of screen size on student learning
Nicholas S. Freestone
Chemical and Pharmaceutical Sciences, Kingston University, London, United Kingdom

PC060 The benefits of collaboration in hosting a joint physiological research symposium
Tristan Pocock1, Liam Bagley2, Elizabeth Sheader1, David J. Greensmith3, Ian Kay2
1Faculty of Biology, Medicine and Health, University of Manchester, Manchester, United Kingdom, 2School of Healthcare Science, Manchester Metropolitan University, Manchester, United Kingdom, 3School of Environment & Life Sciences, University of Salford, Salford, United Kingdom

PC062 Simplified organized-structured-practical-examinations to prepare students for examinations involving human subjects
Michael Scholz
School of Medicine, Medical Science and Nutrition, University of Aberdeen, Aberdeen, United Kingdom

PC064 Augmenting Reality in Bioscience Education
Darryl O'Hare3, William Hurst2, Andrew Sands3, Conor Forker1, **John Barrow**1
1Institute of Education for Medical and Dental Sciences, University of Aberdeen, Aberdeen, Aberdeenshire, United Kingdom, 2Department of Computer Science, Liverpool John Moores University, Liverpool, United Kingdom, 3Imagin3D, Daresbury, United Kingdom

PC066 Impact of a Final Year Skills Workshop Series for Undergraduate Medical Science Students
John Barrow, Derek Scott
Institute of Education for Medical and Dental Sciences, University of Aberdeen, Aberdeen, Aberdeenshire, United Kingdom

PC068 Structure-function relationships, 3D printing and public engagement – developing teaching exercises to integrate core principles and communication skills with a modern technological approach
Steve J. Tucker
School of Medicine, Medical Science and Nutrition, University of Aberdeen, Aberdeen, United Kingdom

PC070 Embedding principles of research ethics and experimental design in a physiology-based curriculum through the systematic review and meta-analysis of clinical trial data.
Stephen C. Land, David Booth
School of Life Sciences, University of Dundee, Dundee, United Kingdom

PC072 Subject benchmarks for quality assurance and course enhancement
Steve J. Tucker
School of Medicine, Medical Science and Nutrition, University of Aberdeen, Aberdeen, United Kingdom

PC074 Healthier nurses? Activity-based learning about physical activity and well-being.
Laura Ginesi, Penelope Goacher, Sarah Hanson
School of Health Sciences , University of East Anglia , Norwich , United Kingdom

PC076 Assessment of Attitudes of First Year Medical Undergraduate Students towards Communication Skills Training
Khaled Badaam, Shazia Masroor Shaikh
Government Medical College, Aurangabad, Aurangabad, India

PC078 Perceptions of using infographics for physiology poster projects – a comparison between cohorts.
Frances Coombey, Derek Scott
Institute of Education for Medical & Dental Sciences, University of Aberdeen, Aberdeen, United Kingdom

Epithelia & Membrane Transport Poster Communications Session B

PC080 Urea-induced increases in glycosylated UT-B urea transporters
Alan Farrell, **Gavin Stewart**
Biology & Environmental Science, University College Dublin, Dublin, Ireland

PC082 Effects of bile acids on human epithelial sodium channels in Xenopus oocytes and H441 airway epithelial cells
Yinghui Ling1, 2, Sean M. Gettings1, Mike Althaus1
1School of Natural and Environmental Sciences, Newcastle University, Newcastle upon Tyne, United Kingdom, 2School of Animal Science, Anhui Agricultural University, Hefei City, China

PC084 Paracellular water and ion transport is unaffected in ILDR1 knockout mice
Wendy Hempstock1, Shiori Sugioka1, Noriko Ishizuka1, Mikio Furuse2, 3, Hisayoshi Hayashi1
1University of Shizuoka, Shizuoka, Shizuoka, Japan, 2Cellular structure, National Institute of Physiological Sciences, Okazaki, Aichi, Japan, 3Physiological Sciences, The Graduate University for Advanced Studies (SOKENDAI), Okazaki, Japan

PC086 The mode of action of the NHE3 inhibitor tenapanor in intestinal Na+ absorption
Noriko Ishizuka, Shino Koido, Hisayoshi Hayashi
University of Shizuoka, Shizuoka, Japan

PC088 Development of human and rat PTC monolayers as in vitro models of nephrotoxicity
ahmad Obaid1, 2, C Brown1, G Chung1
1ICaMB, Newcastle University, Newcastle, United Kingdom, 2Umm Al Qura University, Mecca, Saudi Arabia

PC090 Gastroenteritis Management: Interplay of chemotherapy and Electrolytes Equilibration

Hauwa M. Ambali1, Julius O. Aiyedun3, Khalid T. Biobaku4, Oyebisi M. Azeez2, Saliu A. Ameen5
1Veterinary medicine, University of Ilorin, Ilorin, Kwara, Nigeria, 2Vet Physiogy and Biochemistry, University of Ilorin, Ilorin, Nigeria, 3Department of Vet public Health, University of Ilorin, Ilorin, Nigeria, 4Department of Vet Pharmacology, University of Ilorin, Ilorin, Nigeria, 5Department of Vet Medicine, University of Ilorin, Ilorin, Nigeria

Human & Exercise Physiology Poster Communications Session B

PC092 NIRS-derived Muscular Oxygen Uptake During Exercise in Humans
Thomas Beltrame1, 2, 3, 4, Jessica Koschate2, Uwe Hoffmann2, Mariana Gois3, Richard Hughson5, Maria Frade3, Stephanie Linares3, Ricardo Torres1, Aparecida Catai3
1University of Campinas, Campinas, Brazil, 2German Sport University Cologne, Köln, Germany, 3Federal University of Sao Carlos, Sao Carlos, Brazil, 4Universidade Ibirapuera, So Paulo, Brazil, 5University of Waterloo, Waterloo, Ontario, Canada

PC094 Electric fields stimulate directional migration of synovial mesenchymal stem cells
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PC096 Maximum inspiratory pressure vs functional capacity in Portuguese active elderly undergoing Multicomponent Training
Cristina Blasco-Lafarga2, Ainoa Roldán1, Nieves María Blasco-Lafarga3, M.Carmen Gómez-Cabrera4, Jose Alberto R. Duarte5, Joana Carvalho5
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PC098 The influences of skeletal muscle temperature on muscle deoxygenation and metabolism at fixed exercise workload
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PC099 Diving-related flow-mediated dilation responses following imposed oscillatory shear stress
Otto F. Barak3, Ryan L. Hoiland1, Tanja Mijacika2, Nebojsa Janjic3, Dmitar Vlahovic3, Philip Ainslie1, Zeljko Dujic2
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PC100 Impaired flow-mediated dilation stimulated by sustained increases in shear stress in high-altitude excessive erythrocytosis
Joshua C. Tremblay1, Geoff B. Coombs2, Connor A. Howe2, Gustavo A. Vizcardo-Galindo3, Rómulo J. Figueroa-Mujíca3, Daniela Bermudez3, Michael M. Tymko2, Francisco Villafuerte3, Philip Ainslie2, Kyra E. Pyke1
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PC102 Post-prandial hyperlipidaemia impairs dynamic cerebral autoregulation
Chris Marley1, Hayato Tsukamoto1, 4, Danielle Davis1, 2, Julien Brugniaux1, 3, Jonathan Smirl5, Damian Bailey1
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PC104 Comparative assessment of serum and urine indices of renal function amongst athletes and non-athletes in Port Harcourt, Nigeria.
Datonye V. Dapper1, Konji I. Davies1, Pedro Emem-Chioma2, Arthur N. CHUEMERE1
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PC106 The effects of work rate and pedalling cadence on skeletal muscle oxygenation during cycling
Cameron Dockerill1, 2, Lisha Shastri2, Mariana Alkhalil2, Claire Forbes2, Gerrard Rafferty2, Tetsuo Takaishi4, Luyu Zhang3, Koji Ishida3, 5, Federico Formenti2, 6, 7
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PC107 Healthy pregnancy does not exaggerate the cardiac response to submaximal exercise
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PC108 Synchronization of blood pressure and heart rate during cycling with various intensities
Evgeniya Orlova, Olga Tarasova, Olga Vinogradova, Anatoly Borovik
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PC110 Whole-body cooling results in reduced muscle blood flow but faster muscle oxygen uptake kinetics
Nicholas Beckett-Brown1, 2, Olivier Seresse1, Alexus McCue1, 2, Juha Peltonen3, Laura Vilén5, David Marsh4, David A. MacLean4, Dominique Gagnon1, 2
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PC112 The impact of acute exercise on microRNAs associated with inflammation in healthy subjects: a pilot study
Christopher Balchin1, Rhiannon Peters1, Nathanael Wood1, Donna L. Johnson2, Oliver Wilson1, Antonios Stavropoulos-Kalinoglou1
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PC114 Comparative assessment of some cardiovascular risk factors amongst HIV seronegative subjects, HIV seropositive ART naïve subjects and HIV seropositive subjects on ART in Port Harcourt, Nigeria
Stephenson D. Lawson, Comfort O. Iyama-Boma, Igbiks Tamuno, Sunday O. Ojeka, Arthur N. CHUEMERE, **Datonye V. Dapper**
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PC116 The acute effect of ischemic preconditioning on cycling performance
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PC118 Characterisation of the decline in maximal voluntary isokinetic power during ramp-incremental cycle ergometry exercise
Molly M. Baldwin, Matthew R. Chadwick, Bryan J. Taylor, Karen M. Birch, Carrie Ferguson
School of Biomedical Sciences, University of Leeds, Leeds, United Kingdom

PC120 The influence of temperature on localized muscle oxygen uptake, oxygenation, and blood flow during exercise
Alexus McCue1, Juha Peltonen3, Nicholas Beckett-Brown1, Olivier Seresse1, David Marsh2, David A. MacLean2, Dominique Gagnon1
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PC122 Central and peripheral contributions to submaximal exercise performance in older adults
Siana Jones1, Martin G. Schultz2, Therese Tillin1, Suzanne Williams1, Nishi Chaturvedi1, Alun D. Hughes1
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PC124 Age and gender mediate the small association of MIP and functional capacity in healthy active elderly
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PC126 Cerebrovascular Response To Graded Exercise In Young Men and Women: A Pilot Study
Joseph H. Shelley, John Ashley, Brandon Stone, Jongjoo Sun, Luis Ambrosio, J. Mikhail Kellawan
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PC128 Mouse chromosome X locus flanking Pou3f4 gene affects muscle mass by affecting the number of muscle fibres
Abdullah M. Albloshi1, Paige M. Brooks2, Thomas M. Coate2, Arimantas Lionikas1
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PC130 Motor Unit Characteristics of the Human Vastus Lateralis following Eccentric/ Concentric induced Functional Decline
Daniel McCormick, John Gladman, Paul L. Greenhaff, Philip J. Atherton, Mathew Piasecki
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PC132 Cardiovascular consequences of fatiguing expiratory muscle work
Tim A. Hardy1, Marcelle P. Ribeiro2, Gemma K. Lyall1, Karen M. Birch1, Carrie Ferguson1, Bryan J. Taylor1
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Metabolism & Endocrinology Poster Communications Session B

PC134 Novel low dose spironolactone protects experimentally-induced polycystic ovarian syndrome against insulin-resistant metabolic disturbances through anti-androgenic mechanism
Oluwaseun A. Adeyanju, Timothy Falodun
Physiology, Afe Babalola, Ilorin, Kwara, Nigeria

PC136 Effects of Lunar Cycle on blood glucose level and autonomic functions in type 2 diabetic patients
SUTANU DUTTA CHOWDHURY, SUBHASISH PRAMANIK, RUPSA GHOSH
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PC138 Alanine scanning of exenatide reveals signalling bias at the recombinant GLP-1 receptor
Jacqueline Naylor1, Gulten Geneci1, James Dodgson2, Stephanie Oldham1, Sarah Will1, Jacqueline Metcalfe2, Maria Bednarek2, David C. Hornigold1
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PC140 L-ergothioneine supplement protect testicular functions in cisplatin-treated wistar rats
Ayobami Dare1, Olugbemi T. Olaniyan2, Maimuna A. Salihu1, Linus K. Ilesanmi1
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PC142 Maintenance Impact of Large doses of Vitamin C in Pancreatomized Rat Model
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PC144 Skeletal myogenesis is accelerated by key growth factors contained in the human platelet secretome
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PC146 Vitamin D receptor regulation of skeletal muscle mass through coordination of muscle remodelling and energy metabolism genesets
Joseph J. Bass1, Daniel Wilkinson1, Kenneth Smith1, Andrew Philp2, Nathaniel J. Szewczyk1, Mark E. Cleasby3, Iain J. Gallagher4, Philip Atherton1
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PC148 Biosensors HyPer and HyPer2 to monitor intracellular hydrogen peroxide in skeletal muscle cells and fibres
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PC150 Comparative study of protein tyrosine phosphatase 1B (PTP1B) inhibitors in high-fat/high-cholesterol diet fed C57/B6 and ApoE-/- mouse models of diabetes and cardiovascular diseases
Sarah Kamli-Salino, Dawn Thompson, Nimesh Mody, Mirela Delibegovic
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PC152 Diet-induced obesity impairs muscle stem cell function and redox homeostasis, which is linked to CD36 in mice
Sandrine Verpoorten, David Scully, Peggy Sfyri, Antonios Matsakas
Hull York Medical School, Hull, United Kingdom

PC154 Hypoglycaemic, Antihyperglycaemic and Anti-Lipid Peroxidation Potential of Avocado Peel in Rat Model
Ogadinma Ilochi2, **Arthur N. CHUEMERE**1, Datonye V. Dapper2, Michael Anyiyeloye3, T.A. Kolawole1
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PC156 Iron uptake and utilization in copper-toxic female Wistar rats
Anthony O. Odetola1, 2, Ogochukwu F. Eddie-Anunobi1, Bernard O. Adele1, Idara E. Emediong1, Abayomi O. Ige1, Elsie O. Adewoye1
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PC158 Improvement of the indicator amino acid oxidation technique for the assessment of methionine requirements in dogs
Jonathan Lewis1, Robyn Bednall2, Richard Haydock2, David Allaway2, Kenneth Smith1, Beth Phillips1, Matthew Harrison2
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PC160 Sqstm1/p62 and Nrf2 double knockout mice spontaneously develop nonalcoholic steatohepatitis
Eiji Warabi, Kentaro Akiyama, Kosuke Okada, Toru Yanagawa, Satoru Takahashi, Tetsuro Ishii, Junichi Shoda
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PC162 Probiotics Reduce Oxidative Stress Parameters in The Liver of Wistar Rats (Rattus Norvegicus) Induced by High-Fat Diet
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PC164 Effects of rilpivirine and quercetin on triglyceride, adipocytokines and on oxidative stress markers in adipose cells in vitro
Shalini Behl1, Abdu Adem2, Arif Hussain3 and **Jaipaul Singh**1
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PC166 Repeated dosing of absorbable concentrations of (poly)phenols induces lipolysis in differentiated human-derived adipocyte cells
Robert Little1, 2, Michael Houghton1, Martin Wabitsch3, Asimina Kerimi1, Gary Williamson1, 4
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PC168 Protective Effect of Allium Cepa against Coffee Induced Oxidative Stress on Impairment of Blood Glucose
Arthur N. CHUEMERE1, Ogadinma Ilochi2, Datonye V. Dapper1, Michael Anyiyeloye3, Oluwadare Olorunfemi1
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PC170 Annona muricata Linn. ethanolic leaf extract ameliorates reproductive dysfunctions in streptozotocin-induced diabetic Wistar rats
Olushola E. Adeleye1, Ngozichukwu A. Aboajah1, Adenike I. Adeleye2, Emmanuella A. Sogebi3, Abiodun S. Adetomiwa4, Johnny O. Olukunle1
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PC172 The impact of age-induced hyperglycaemia on structural remodelling in the left ventricle of the streptozotocin-induced type 1 diabetic rat
Jaipaul Singh1, Frank C. Howarth2, Ernest Adeghate2, Kishore Bidasee3, Tahrem Waqar1
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PC174 The impact of coupling beta-hydroxy-beta-methylbutyrate (HMB) ingestion to an oral glucose tolerance test in relation to glucose/insulin kinetics across age
Philip J. Herrod1, Nima Gharahdaghi1, Hannah Phillips1, Reesha Ranat1, Edward Hardy1, John Rathmacher2, Philip Atherton1, Bethan Phillips1
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PC176 The effects of treadmill, elliptical and rowing exercise on fat and CHO oxidation in healthy males
Dominique Gagnon1, 2, Stephanie Munten1, Michelle Filipovic1, 3
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PC178 Phenotypic screening reveals diverse gene expression signatures between different browning agents using high throughput Openarray qPCR in human adipocytes
Graeme R. Davies1, Fynn Krause2, Matthieu Chodorge3, James Dodgson3, Jules Griffin2, Yu-Hua Tseng4, David Baker1, Christopher Church1
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PC180 Very low-calorie diet (VLCD) improves markers of insulin sensitivity in obese individuals without reducing pre-existing elevated circulatory branched chain amino acids (BCAA)
Mariwan H. Sayda, Mohammed Hariz Aziz, Bethan E Phillips, Kate Hession, Imran Ramzan, Kenneth Smith, Iskandar Idris, Philip Atherton
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PC182 The effect of a caffeinated beverage on supraclavicular temperature in adult humans
Declan Wayne1, James Law1, Harold Sacks2, Helen Budge1, Michael Symonds1, 3
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PC184 The importance of breakfast glycemic control on systemic BDNF and dynamic cerebral autoregulation in men
Hayato Tsukamoto1, 2, Aya Ishibashi3, Chris Marley1, Yasushi Shinohara2, Soichi Ando4, Damian Bailey1, Takeshi Hashimoto2, Shigehiko Ogoh5
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PC186 Age, gender and species dependency of expression of voltage-gated calcium channels in murine white fat adipose depots.
Olena A. Fedorenko, Maria Toledo-Rodriguez, Nneoma Akaniro-Ejim, **Paul A. Smith**
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PC188 Skeletal muscle sarcoplasmic reticulum Ca2+ uptake preferentially use glycogenolytic derived ATP
Niels Ørtenblad, Maja R. Kristiansen, joachim nielsen, Rasmus Jensen
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PC190 Protective Effect of Combined Administration of Lycopene and Zinc Supplements on Oxidative Stress and Lipid Peroxidation Biomarkers in Alloxan Induced Diabetic Wistar Rats
Kabir M. Ahmed
Human Physiology Faculty of Basic Medical Sciences, Ahmadu Bello University, Zaria, Kaduna, Nigeria

PC192 17β-Estradiol protects sequestosome 1 deficient mice from hyperphagia and obesity
Eiji Warabi, Airi Hakamata, Junya Uwayama, Toru Yanagawa, **Tetsuro Ishii**
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PC194 Melatonin Mitigates Hormonal Toxicity in Cannabis-Treated Female Wistar Rats: Involvement of Cannabinoid Receptor Blockers
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PC196 Impact of carotid sinus nerve resection on metabolic dysfunction induced by ageing and by long-term hypercaloric diet consumption in rats
Joana F. Sacramento, Cláudia C. Batista, Bernardete F. Melo, Cláudia S. Prego, Silvia V Conde
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PC198 Phoenixin stimulates insulin secretion in INS-1E beta cells and rat pancreatic islets via cAMP/Epac pathway
Maria Billert, Marek Skrzypski, Tatiana Wojciechowicz, **Mariami Jasaszwili**, Krzysztof W. Nowak
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PC200 Adropin modulates proliferation and differentiation of 3T3-L1 cells and rat primary preadipocytes
Mariami Jasaszwili, Tatiana Wojciechowicz, **Maria Billert**, Krzysztof W. Nowak, Marek Skrzypski
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PC202 Human placental metabolism of vitamin D and transfer to maternal and fetal circulations
Brogan Ashley1, Felicity Hey2, Emma Lofthouse1, Rohan Lewis1, Kerry Jones2, Nicholas Harvey1, **Jane Cleal**1
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PC204 Endogenous stem cell mobilization versus exogenous stem cell therapy in rat model of chronic kidney disease
Yasser M. ELWAZIR, Shereen Morsy, Mona Farouk, Mohamed Abdo
Medical Physiology, Suez Canal University, Ismailia, Ismailia, Egypt

PC206 Planarian Flatworms: an emerging animal model in metabolic physiology

Melissa Lewallen, Warren W. Burggren
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Neuroscience Poster Communication Sessions B

PC210 Glutamate receptor and transducer channel modulation of baroreceptor firing in a rat isolated aorta/aortic depressor nerve preparation.
Claudiu Giuraniuc1, Robert W. Banks2, Julian F. Paton3, Guy S. Bewick1
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PC212 Schwann cell glycogen: a potential role in supporting A fibre conduction during high frequency stimulation in sciatic nerve
Laura R. Rich, Angus M. Brown
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PC214 Disruption of the actions of exogenous glutamate on the stretch-evoked responses of muscle spindles in GluK2-deficient mice
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PC216 Progress towards making neuromuscular junctions in microfluidic devices using human induced pluripotent stem cells
Claire D. Hetherington1, Marie Kruth2, Claudiu Giuraniuc1, Siddharthan Chandran3, Gareth Miles4, Guy S. Bewick1
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PC218 Metabolic Switch of Nerve Cells During Secondary Response to Axotomy of Neighbouring Neurons
Rabia I. Ozturk3, 2, Seyma Kablan2, Sadik Bay2, Gurkan Ozturk1, 2
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PC220 Protective effect of co-administration of vitamins C and E on reserpine-induced motor and cognitive impairments and oxidative stress in mice
Timothy Danboyi1, Abdulwahab Alhassan3, Abdulazeez Jimoh3, Evelyn Hassan-Danboyi2
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PC222 Understanding the role of HACD enzymes and very long chain fatty acids in zebrafish muscle development and disease
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PC224 Brain activity during choice reaction task in military servicemembers with mild traumatic brain injury and posttraumatic stress disorder
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PC226 Detection of Ion Channel Events with "Artificial Intelligence" (AI) Deep Learning
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PC228 Cholinergic modulation of cell proliferation in the postnatal murine spinal cord.
Norah Altuwaijri, Susan Deuchars, James Deuchars
University of Leeds, Leeds, United Kingdom

PC230 Repeated hypoglycaemia attenuates cFos expression in corticotrophin-releasing hormone neurons of the paraventricular nucleus of hypothalamus
Adhithya Sankar, Tansi Khodai, Francesca Mcewan, Katie Tye, Simon Luckman
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PC232 Lagenaria beviflora fruit reduces free radicals in the carrageenan air-pouch model of inflammation in rats.
Oyetola T. Oyebanjo1, Abayomi Ajayi2, Gbenga S. Olayinka1, Adetunji S. Onasanwo1
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PC234 Amygdalar output in Depression: The Stria Terminalis and HPA axis reactivity in Major Depressive Disorder.
Liadan Tobin-Schnittger1, 5, Anurag Nasa1, 2, Ashka Shah1, 3, Conor B Kennedy1, 5, Elena Roman1, 3, Darren W. Roddy1, 5, Erik O'Hanlon1, Kirk Levins4, Veronica O'Keane1
1Trinity College Institute of Neuroscience, Trinity College Dublin, Dublin, Ireland, 2School of Medicine, Trinity College Dublin, Dublin, Ireland, 3School of Medicine, Royal College of Surgeons in Ireland, Dublin, Ireland, 4Department of Anaesthetics, Intensive Care and Pain Medicine, St Vincents University Hospital, Dublin, Ireland, 5Department of Physiology, University College Dublin, Dunlin, Ireland

PC236 High Frequency Spinal Cord Stimulation (HF-SCS) in a Sub-Acute Animal Model of Spinal Cord Injury (SCI)
Anthony F. DiMarco1, **Krzysztof E. Kowalski**2
1Department of Physical Medicine and Rehabilitation, Case Western Reserve University / MetroHealth Medical Center, Cleveland, Ohio, United States, 2Medicine / Physical Medicine & Rehabilitation, Case Western Reserve University/MetroHealth Medical Center/Louis Stokes Cleveland VAMC, Cleveland, Ohio, United States

PC238 Effects of High Frequency Spinal Cord Stimulation (HF-SCS) Applied to the Ventral Surface of the Spinal Cord
Krzysztof E. Kowalski3, Jaroslaw R. Romaniuk4, Peter A. Kirkwood1, **Anthony F. DiMarco**2
1Neurology, University College London, London, United Kingdom, 2Physical Medicine and Rehabilitation, Case Western Reserve University, MetroHealth Medical Center, Cleveland, Ohio, United States, 3Medicine/Physical Medicine and Rehabilitation, VA Medical Center/Case Western Reserve University/ MetroHealth Medical Center, Cleveland, Ohio, United States, 4Research, VA Medical Center, Cleveland, Ohio, United States

PC240 Lesions in the Xenopus laevis tadpole hindbrain reveal neural substrates for simple motor decision-making.
Giulia Messa, Stella Koutsikou
Medway School of Pharmacy, University of Kent, Chatham Maritime, United Kingdom

PC242 Anti-depressant-like potentials of ethanol extract of the Spondias mombin in male mice
Lawrence D. Adedayo1, 2
1Physiology, Bowen Univeristy Iwo, Iwo, Osun, Nigeria, 2Physiology, University of Ibadan, Ibadan, Oyo, Nigeria

Vascular & Smooth Muscle Physiology Poster Communications Session B

PC244 Cell signalling effects of Polyfect and Superfect dendrimer delivery systems on ErbB family of receptor tyrosine kinases
Saghir Akhtar1, Bindu Bindu Chandrasekhar2, Ibrahim Benter3, Ahmed El-Hashim4
1College of Medicine, Qatar University, Doha, Qatar, 2Pharmacology and Toxicology, Kuwait University, Kuwait, Kuwait, 3Eastern Mediterranean University, Famagusta, Cyprus, 4Faculty of Pharmacy, Kuwait University, Kuwait, Kuwait

PC246 Comparative study on the effects of Coir and Cissus populnea (Food gum) fibres as suture materials in rats
Oluchi B. Igbokwe1, 2, Adesina P. Arikawe2, Taofeek O. Azeez1
1Biomedical Technology, Federal University of Technology, Lagos, Lagos, Nigeria, 2Physiology, College of Medicine, University of Lagos, Lagos, Lagos, Nigeria

PC248 Lower dietary antioxidant vitamins consumption and vascular endothelial dysfunction in older sedentary males; justification for dose adjustment?
Maria T. Filipponi1, Julien Brugniaux2, Chris Marley1, Damian Bailey1
1Neurovascular Research Laboratory, University of South Wales, Pontypridd, United Kingdom, 2Université Grenoble Alpes, Grenoble, France

PC250 Global Reach 2018: High altitude acclimatisation improves neurovascular coupling in man
Benjamin S. Stacey1, Ryan L. Hoiland2, Hannah G. Caldwell2, Connor A. Howe2, Tyler Vermeulen2, Michael M. Tymko2, Gustavo A. Vizcardo-Galindo3, Daniela Bermudez3, Francisco Villafuerte3, Philip Ainslie2, Damian Bailey1
1Neurovascular Research Laboratory, Faculty of Life Science and Education, Univerisity of South Wales, Pontypridd, United Kingdom, 2Center for Heart, Lung and Vascular Health, University of British Columbia, Okanagan, Kelowna, British Columbia, Canada, 3Laboratorio de Fisiología Comparada, Departamento de Ciencias Biológicas y Fisiológicas, Facultad de Ciencias y Filosofía, Universidad Peruana Cayetano Heredia, Lima, Peru

PC252 The Effect of Flow on Weibel-Palade Body Secretion and its Contribution to Atherosclerosis
Ashley Money, David Beech, Jurgen Schneider, Lynn McKeown
LICAMM, University of Leeds, Leeds, United Kingdom

PC254 Perinatal exposure of dams to a high salt diet impaired vascular function and elevated biomarkers of inflammation in the offspring
Ahmed K. Oloyo, Santan Olley, Esther Ohihoin, Abdulahi Adejare, Khadijat Ismail-Badmus, Esther Asamudo, Olusoga Sofola
Physiology, University of Lagos, Idi-Araba, Surulere, Nigeria

PC256 Angiogenesis following different physiological stimuli elicits distinct structural and functional outcomes in rat skeletal muscle.
Roger Kissane1, 2, Peter Tickle2, Stuart Egginton2
1University of Liverpool, Liverpool, United Kingdom, 2University of Leeds, Leeds, United Kingdom

PC258 Interaction between a new Rab GTPase (Rab46) and dynein complex regulates Weibel-Palade body trafficking in response to inflammatory stimuli
Lucia Pedicini, Katarina Miteva, David Beech, Lynn McKeown
Leeds Institute of Cardiovascular and Metabolic Medicine, University of Leeds, Leeds, United Kingdom

PC260 Vasotracker: flexible, open source pressure myography
Calum Wilson1, Matthew D. Lee1, Penny Lawton2, Chris D. Saunter2, John M. Girkin2, John G. McCarron1
1SIPBS, University of Strathclyde, Glasgow, Lanarkshire, United Kingdom, 2Durham University, Durham, United Kingdom

PC264 Maternal and offspring outcomes associated with duration of second stage of labour: A systematic review.
Amy Ingram, Nicole Smith
School of medical science, University of Aberdeen, Aberdeen, United Kingdom

PC266 Oleic acid inhibits oxytocin stimulated myometrial contractions in strips from pregnant rat myometrium.
Najla M. Hag1, Matthew J. Elmes2, **Anatoliy Shmygol**1
1Department of Physiology, United Arab Emirates University, Al Ain, United Arab Emirates, 2Division of Food, Nutrition and Dietetics, University of Nottingham, Loughborough, United Kingdom

PC302 How Does Extracellular Acidification Stimulate Uterine Contractions?
Asmaa Almohanna, University of Liverpool, United Kingdom

PC304 Effects of diet on energy expenditure in overweight and obese
Matevz Arcon, Abertay University, United Kingdom

PC306 Does hyaluronidase enhance drug penetration to mechanoreceptors?
Peter Cahusac, Alfaisal University, Saudi Arabia

PC308 Dietary fibre in food
Abhijit Chatterjee, WBSU, India

PC310 Gestational Exposure to Bisphenol-A in Wistar Rats: The Effects on Successive Offspring and Modulatory Role of Melatonin.
Kingsley Eghianruwa, University of Ibadan, Nigeria

PC312 Role of cardiac action potential changes on arrhythmogenic late Ca2+ spark production
Ewan Fowler, University of Bristol, United Kingdom

PC314 5-HT2A and 5-HT7 receptors exert opposing effects on Na+/K+-ATPase function in the locomotor network of Xenopus laevis tadpoles
Lamia Hachoumi, University of St Andrews, United Kingdom

PC316 Glucocorticoids promote mitochondrial fatty acid oxidation in fetal cardiomyocytes
Jessica Ivy, University of Edinburgh, United Kingdom

PC318 The retinoic acid receptor as a novel therapy target for neuromuscular degenerative disease
Azita Kouchmeshky, University of Aberdeen, United Kingdom

PC320 CRISPR disruption and UK Biobank analysis of a highly conserved polymorphic enhancer suggests its role in anxiety and male alcoh
Alasdair MacKenzie, University of Aberdeen, United Kingdom

PC322 The effects of multiple exercise bouts on appetite and metabolic response to food ingestion
Lewis Mattin, Manchester Metropolitan University, United Kingdom

PC324 The Effect of Exercise on Inflammatory Markers in Cerebrospinal Fluid and Plasma : A Systematic Review
Samantha Moore, University of Nottingham, United Kingdom

PC325 Treating cell lines with retinoic acid: where it goes in the cell viewed with new fluorescent analogues
Francesca Moramarco, University of Aberdeen, United Kingdom

PC326 ANRIL DNA methylation at birth may act as a mediator for the influence of maternal pre-pregnancy BMI on childhood adiposity
Robert Murray, University of Southampton, United Kingdom

PC328 Could Gestational and Hormonal Effect Affect Tooclysis?
Blessing Osaghae, University of Liverpool, United Kingdom

PC330 The Harwell Archive - Acquiring and Sharing Mouse Resources
Julie Roberts, MRC Harwell Institute, United Kingdom

PC332 The LINC00961 locus regulates angiogenesis in vitro and contributes to in vivo peripheral and cardiac ischaemic risk
Ana-Mishel Spiroski, University of Edinburgh, United Kingdom

PC334 Interaction of coagulation Factor XII and the opportunistic pathogen C. albicans with host cells.
Maria-Louise Williams, University of Aberdeen, United Kingdom

PC336 An Investigation of Subtypes of Purinergic-2X Receptors and their effects on Myometrial Contractility in Laboring and non-Labori
Hind Zafrah, University of Liverpool, United Kingdom

The Rob Clarke Awards are awarded for excellent physiology research carried out by undergraduates. The finalists will be presenting their posters for judging in the main poster area between 13.15 and 14.30. The winners will be announced at 16.45.

RC01 High throughput measurement of cytokine evoked intracellular oxidative stress in the heart
Zahra Alhumaidi, University of Salford, UK

RC02 Oxidation of a Novel Hydrogel Carbohydrate Drink During Endurance Running
James Barber, University of Bath, UK

RC03 Impact of Type 1 interferons on mitochondrial function in human skeletal muscle cells
Holly Bond, Manchester Metropolitan University, UK

RC04 Post-exercise maltodextrin-fructose ingestion augments overnight recovery of exercise capacity, compared to maltodextrin only
Edward Gray, University of Bath, UK

RC05 Can complexity analysis be used in screening for atrial fibrillation?
Natasha Howley, University of Cambridge, UK

RC06 Neurovascular coupling in the retina: do retinal astrocytes sense vascular stretch?
Tamara McErlain, Queen's University Belfast, UK

RC07 Characterising Homologous ApoE Astrocyte Inflammatory Responses Using Induced Pluripotent Stem Cell Models
Cian O' Connor, Trinity College Dublin, Republic of Ireland

RC08 Does aberrant exosomal signalling by skeletal muscle promote neuromuscular ageing?
Rebecca Robertson, University of Liverpool, UK

RC09 Characterising the Molecular Basis of Arrhythmic Substrate in an Ageing Long QT Syndrome 3 Murine Model
Khalil Saadeh, University of Surrey, UK

RC10 Elevated systemic oxidative-nitrosative stress in concussed rugby union players; the impact of impact!
Lucy Venables, University of South Wales, UK

RC11 The influence of affective state on respiratory muscle activity
Juliette Westbrook, King's College London, UK

RC12 The effect of resting blood pressure on dynamic cerebral autoregulation in adolescents
Max Weston, University of Exeter, UK

RC13 Effects of disruption of the CFTR E873-R933 salt bridge on CFTR membrane density and gating function
Ella White, University College London, UK

RC14 Placental endocrine malfunction induces reproductive defects in murine offspring postnatally
Sijia Yao, University of Cambridge, UK

RC15 The molecular modelling of anaesthetics binding to GABAA receptors identifies potential propofol binding sites
YiZhou Yu, Imperial College London, UK

Annual Review Prize Lecture

Initiated in 1968, the Annual Review Prize Lecture is The Society's premier award. It recognises research that has a wide interest and impact.

Tuesday, 9 July • 18:00 – 18:45
Boyd Suite, Ground Floor

Silvia Arber, University of Basel, Switzerland

PL04 Circuits Solutions for Programming Actions

Dr. Silvia Arber is a Professor of Neurobiology at the Biozentrum of the University of Basel and a Senior Investigator at the Friedrich Miescher Institute for Biomedical Research (FMI) in Basel. Dr. Arber studied biology at the Biozentrum and obtained her Ph.D. working in the laboratory of Pico Caroni at the FMI in 1995. Her research, which focused on muscle differentiation and nerve-muscle synapse formation, was recognized by two prizes for the best doctoral thesis. She then pursued a postdoctoral fellowship in the laboratory of Thomas Jessell at Columbia University in New York, where she delineated mechanisms important for motor neuron identity and sensory synaptic input specificity.

Dr. Arber returned to Basel in 2000 to establish her independent research group at the Biozentrum and the FMI, where she has been examining how neural circuits in the spinal cord and brain develop and control movement. She has been recognized for her pioneering research with a number of prizes, including the Pfizer Research Prize (1998), the National Latsis Prize (2003), the Schellenberg Prize (2003), the Friedrich Miescher Award (2008), the Otto Nägeli Award (2014), the Louis Jeantet Prize for Medicine (2017) and the NAS Pradel Research Award (2018). Arber also secured two «ERC Advanced Investigator Grants» from the European Research Council (ERC) in 2010 and 2016

Society Dinner

Tuesday, 9 July from 19:00 – late

Beach Ballroom, Beach Promenade, Aberdeen AB24 5NR

Every year the Society Dinner is the foremost social activity and Physiology 2019 is no different. Your ticket includes a welcome drink, three course meal, and wine and soft drinks, and ceilidh on the ballroom's sprung dance floor.

Introducing
Current Research in Physiology

Edited by **Susan Wray**,
University of Liverpool Institute of Translational Medicine

Current Research in Physiology is a new primary research, peer-reviewed, gold open access journal.

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09:00 Symposia

Nuclear receptors and transcriptional regulation in metabolism and endocrinology	Boyd Suite
Respiratory influences on oxygen transport and exercise performance in health and disease	Gordon A Suite
Transverse tubule and dyadic dysfunction in cardiac disease	Fleming Auditorium

09:00 Oral Communications

Epithelia & Membrane Transport C	Crombie B Suite
Education & Teaching C	Crombie A Suite
Neuroscience C	Gordon B Suite
Vascular & Smooth Muscle Physiology C	The Balmoral Suite

10:30 Refreshment break

11:00 Sharpey Schafer Prize Lecture

From Retroviruses to Human Birth

Roger Smith, The University of Newcastle, Australia — Boyd Suite

12:00 Lunch

12.00 – 13.30 Annual General Meeting — **The Balmoral Suite**

13:30 Symposia

Milestone achievements in anion transporter research	Gordon A Suite
The muscle spindle: exciting new insights from an old system	Boyd Suite
Understanding complex behaviours in the microcirculation: from blood flow to oxygenation	Fleming Auditorium

13:30 Oral Communications

Cardiac & Respiratory Physiology C	Crombie B Suite
Human & Exercise Physiology C	Gordon B Suite
Metabolism & Endocrinology C	Crombie A Suite

15:00 End of conference

Physiology 2019 Virtual Issue

A joint virtual issue of The Physiological Society's journals, *The Journal of Physiology*, *Experimental Physiology* and *Physiological Reports*, compiled to complement the programme of the Physiology 2019 meeting.

FREE ACCESS to these articles at **bit.ly/Phys19VI**

Physiological Reports

Modulation of the lung inflammatory response to ozone by the estrous cycle
Nathalie Fuentes, Noe Cabello, Marvin Nicoleau, Zissis C. Chroneos, Patricia Silveyra. 7(5)

The nuclear receptor REV-ERBα represses the transcription of growth/differentiation factor 10 and 15 genes in rat endometrium stromal cells
Lijia Zhao, Keishiro Isayama, Huatao Chen, Nobuhiko Yamauchi, Yasufumi Shigeyoshi, Seiichi Hashimoto, Masa-aki Hattori. 4(2)

Lipopolysaccharide-induced inflammation does not alter muscle spindle afferent mechanosensation or sensory integration in the spinal cord of adult mice
Dasha Zaytseva, Anusha Allawala, Joy A. Franco, Shea Putnam, Adam M. Abtahie, Nina Bubalo, Connor R. Criddle, Tuan A. Nguyen, Peter Nguyen, Shreejit Padmanabhan, Puneet Sanghera, Martina Bremer, Tzvia Abramson, Katherine A. Wilkinson. 6(17)

Recombinant human erythropoietin does not affect several microvascular parameters in well-trained cyclists
Willem A. J. Birkhoff, Jules A. A. C. Heuberger, Titiaan E. Post, Pim Gal, Frederik E. Stuurman, Jacobus Burggraaf, Adam F. Cohen. 6(24)

Experimental Physiology

Brown adipose tissue remodelling induced by corticosterone in male Wistar rats
Felippe Mousovich-Neto, Marina Souza Matos, Anna Carolina Rego Costa, Ricardo Augusto de Melo Reis, Georgia Correa Atella, Leandro Miranda-Alves, Denise P. Carvalho, Luisa Andrea Ketzer, Vânia Maria Corrêa da Costa. 104(4)

Temporal partitioning of cardiac metabolism by the cardiomyocyte circadian clock
Martin E. Young. 101(8)

Increased skeletal muscle mitochondrial free radical production in peripheral arterial disease despite preserved mitochondrial respiratory capacity
Corey R. Hart, Gwenael Layec, Joel D. Trinity, Oh Sung Kwon, Jia Zhao, Van R. Reese, Jayson R. Gifford, Russell S. Richardson. 103(6)

Peripheral localization of the epithelial sodium channel in the apical membrane of bronchial epithelial cells
Ilaria Musante, Paolo Scudieri, Arianna Venturini, Daniela Guidone, Emanuela Caci, Stefano Castellani, Massimo Conese, Luis J.V. Galietta

Linear and non-linear contributions to oxygen transport and utilization during moderate random exercise in humans
T. Beltrame, R. L. Hughson. 102(5)

Cardiac-specific overexpression of caveolin-3 preserves t-tubular ICa during heart failure in mice
Cherrie H. T. Kong, Simon M. Bryant, Judy J. Watson, David M. Roth, Hemal H. Patel, Mark B. Cannell, Andrew F. James, Clive H. Orchard. 104(5)

The Journal of Physiology

Pericardial application as a new route for implanting stem-cell cardiospheres to treat myocardial infarction
Jianhua Zhang, Zheng Wu, Zepei Fan, Zixi Qin, Yingwei Wang, Jiayuan Chen, Maoxiong Wu, Yangxin Chen, Changhao Wu, Jingfeng Wang. 596(11)

Recruitment of non-perfused sublingual capillaries increases microcirculatory oxygen extraction capacity throughout ascent to 7126 m
Matthias Peter Hilty, Tobias Michael Merz, Urs Hefti, Can Ince, Marco Maggiorini, Jacqueline Pichler Hefti. 597(10)

Carotid chemoreflex activity restrains postexercise cardiac autonomic control in healthy humans and in patients with pulmonary arterial hypertension
Marcelle Paula-Ribeiro, Indyanara C. Ribeiro, Liliane C. Aranda, Talita M. Silva, Camila M. Costa, Roberta P. Ramos, Jaquelina S. Ota-Arakaki, Sergio L. Cravo, Luiz E. Nery, Michael K. Stickland, Bruno M. Silva. 597(5)

Modulation of ClC-3 gating and proton/anion exchange by internal and external protons and the anion selectivity filter
Jeffrey Rohrbough, Hong-Ngan Nguyen, Fred S. Lamb. 596(17)

The role of PHOX2B-derived astrocytes in chemosensory control of breathing and sleep homeostasis
Catherine M. Czeisler, Talita M. Silva, Summer R. Fair, Jillian Liu, Srinivasan Tupal, Behiye Kaya, Aaron Cowgill, Salil Mahajan, Phelipe E. Silva, Yangyang Wang, Angela R. Blissett, Mustafa Göksel, Jeremy C. Borniger, Ning Zhang, Silvio A. Fernandes-Junior, Fay Catacutan, Michele J. Alves, Randy J. Nelson, Vishnu Sundaresean, Jens Rekling, Ana C. Takakura, Thiago S. Moreira, José J. Otero. 597(8)

Effect of movement-related pain on behaviour and corticospinal excitability changes associated with arm movement preparation
Cécilia Neige, Nicolas Mavromatis, Martin Gagné, Laurent J. Bouyer, Catherine Mercier. 596(14)

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Physiological Reports · Experimental Physiology · The Journal of Physiology · The Physiological Society · WILEY

Nuclear receptors and transcriptional regulation in metabolism and endocrinology

Wednesday, 10 July • 09:00 – 10:30
Boyd Suite, Ground Floor

Organiser: Nimesh Mody, University of Aberdeen, UK
Co-organiser: Justin Rochford, University of Aberdeen, UK

Speakers

09:00 Adriana Maggi, University of Milan, Italy

09:30 Ines Pineda-Torra, University College London, UK

09:45 Lars Grøntved, University of Southern Denmark, Denmark
SA041 Regulation of the hepatic feeding response by combined action of insulin and glucocorticoid receptor signalling

10:00 Sander Kersten, Wageningen University & Research, The Netherlands
SA042 Regulation of lipid metabolism by the nuclear receptor PPARα

Respiratory influences on oxygen transport and exercise performance in health and disease

Wednesday, 10 July • 09:00 – 10:30
Gordon A Suite, First Floor

Organiser: Lee Romer, Brunel University London, UK

Speakers

09:00 Bill Sheel, University of British Columbia, Canada
SA043 Blood flow distribution between respiratory vs. locomotor muscles during exercise

09:30 Bryan Taylor, University of Leeds, UK
SA044 Pulmonary vascular dysfunction and exercise intolerance in heart failure

09:45 Zoe Saynor, University of Portsmouth, UK
SA045 Respiratory influences on oxygen transport and exercise performance – a cystic fibrosis perspective

10:00 Ioannis Vogiatzis, Northumbria University, UK
SA046 The effect of manipulating respiratory muscle loading on respiratory and locomotor muscle blood flow regulation during exercise in health and chronic disease

For publication in *Experimental Physiology*

Experimental Physiology
A Publication of The Physiological Society
EP

Transverse tubule and dyadic dysfunction in cardiac disease

Wednesday, 10 July • 09:00 – 10:30
Fleming Auditorium, Ground Floor

Organiser: Katharine Dibb, University of Manchester, UK
Co-organiser: Jessica Caldwell, University of Manchester, UK

Speakers

09:00 TingTing Hong, Cedars-Sinai Medical Center, USA
SA047 cBIN1: from t-tubule folds to dyad organization, microparticles and clinical utility

09:30 Jessica Caldwell, University of Manchester, UK
SA048 Disordered yet functional atrial t-tubules following recovery from heart failure

09:45 Eef Dries, KU Leuven, Belgium
SA049 Microdomain signaling around ryanodine receptors in cardiac disease

10:00 William Louch, University of Oslo, Norway
SA050 Understanding dyadic plasticity in cardiomyocytes

Education & Teaching C

Wednesday, 10 July • 09:00 – 10:30
Crombie A Suite, Ground Floor

09:00 David Colquhoun, Univrsity College London, UK
C031 A proposal concerning what to do about p values

09:15 Steve Tucker, University of Aberdeen, UK
C032 Development of flexible experiential learning exercises to deliver online practical teaching

09:30 Sarah Hall, Cardiff University, UK
C033 Physiology for all: Increasing undergraduate student choice increases engagement with physiology

09:45 Matthew HARDY, University of Bradford, UK
C034 Are learning technologies a barrier to education? – The results of a survey investigating engagement with an online development portfolio for bioscience students

10:00 Cameron Malcolm, University of Aberdeen, UK
C035 Student-created video resources can enhance medical science practical class assessment

10:15 James Clark, King's College London, UK
C036 Data capture, analysis and assessment in physiology education

Epithelia & Membrane Transport C

Wednesday, 10 July • 09:00 – 10:30
Crombie B Suite, Ground Floor

09:00 Ciara Fallon, The Royal College of Surgeons in Ireland, Ireland
C049 Neutraceutical targeting of the bile acid receptor, farnesoid X receptor, for intestinal disease

09:15 Kameljit Kalsi, St George's University of London, UK
C050 Differential effects of ceramide on permeability in human airway epithelial cells

09:30 Jessica Smyth, Royal College of Surgeons in Ireland, Ireland
C040 Regulation of the cystic fibrosis transmembrane conductance regulator (CFTR) by the nuclear bile acid receptor, farnesoid X receptor

09:45 Zong Jie Cui, Beijing Normal University, China expression
C052 Pancreatic stellate cells serve as a brake mechanism on pancreatic acinar cell calcium signaling modulated by methionine sulfoxide reductase

10:00 Wing Hung Ko, The Chinese University of Hong Kong, Hong Kong
C053 Modulation of ion transport and pro-inflammatory cytokine release by HO-1/CO in cultured human airway epithelial cells

10:15 Aparna Shil, Anglia Ruskin University, UK
C054 Artificial sweeteners increase the pathogenic potential of model gut bacteria on the intestinal epithelium

Neuroscience C

Wednesday, 10 July • 09:00 – 10:30
Gordon B Suite, First Floor

09:00 Guy Bewick, University of Aberdeen, UK
C103 ASICs in mechanosensation: ASIC1b deletion in mice reduces blood pressure, perturbs fine motor control in vivo, and reverses amiloride sensitivity of muscle spindle afferent firing

09:15 Fiona O'Brien, University of Liverpool, UK
C104 Modelling Temperature Sensing by Parvocellular Neurones of the Paraventricular Nucleus of the Hypothalamus

09:30 Liadan Tobin-Schnittger, University College Dublin, Trinity College Dublin, UK
C105 The paralaminar nucleus of the amygdala: a potential nexus in the regulation of stress in major depressive disorder

09:45 Emily Mort, University of Cambridge, UK
C106 Maternal obesity alters intermediate memory and anxiety-related behaviours in adult mouse offspring

10:00 Sheila Black, Leeds Teaching Hospitals NHS Trust, University of Leeds, UK
C107 Effect of spinal cord stimulation on autonomic function in patients with failed back surgery syndrome

10:15 William Daniels, University of Witwatersrand, South Africa
C108 Effects of indirect cocaine exposure and early postnatal fostering on epigenetic DNA modification and behavioral phenotypes of drug naïve mice

Vascular & Smooth Muscle Physiology C

Wednesday, 10 July • 09:00 – 10:30
The Balmoral Suite, Ground Floor

09:00 Alexander Zholos, ESC "Institute of Biology and Medicine", Taras Shevchenko National University of Kyiv, A.A. Bogomoletz Institute of Physiology, Ukraine
C121 The muscarinic cation current in murine ileal myocytes (mICAT) inhibited by ketamine can be recovered by TRPC4 agonist (-)-englerin A

09:15 Marcin Ufnal, Medical University of Warsaw, Poland
PC245 Trimethylamine, a gut bacteria metabolite, increases in rat plasma with age and affects vascular smooth muscle cells viability

09:30 Harry Pritchard, University of Manchester, UK
C123 Junctophilin-2 is Necessary for the Formation of Peripheral Ca2+ Signalling Domains in Contractile Vascular Smooth Muscle Cells

09:45 Sonya Frazier, University of Glasgow, UK
PC262 Ultrasound and Microbubble Gene Delivery for Targeting Altered Placental MicroRNAs in Preeclampsia

10:00 Um-May Sumya, University of Aberdeen, UK
C125 Restricted Dietary Intake of Zinc Modulates Parameters of Haemostasis

10:15 Aysegul Kurt, Karadeniz Technical University Faculty of Medicine, Turkey
C126 The antiepileptic agents phenytoin and valproate inhibits oxytocin-induced contractions of myometrium isolated from absence epileptic WAG/Rij rats

Sharpey Schafer Prize Lecture

The Sharpey-Schafer Prize Lecture is an annual lecture given alternately by an established physiologist and an early career physiologist. We particularly encourage international nominations for this lecture.

Wednesday, 10 July • 11:00 – 11:45
Boyd Suite, Ground Floor

Roger Smith, The University of Newcastle, Australia

PL05 From Retroviruses to Human Birth

Roger Smith AM is an NHMRC Senior Principal Research Fellow, Co-Director of the University of Newcastle's Priority Research Centre in Reproductive Science and Director of the Mothers and Babies Research Centre, and Professor of Endocrinology at the John Hunter Hospital in Newcastle Australia. He is internationally recognised for his expertise in the endocrinology of pregnancy, placental function and the timing of birth. His work ranges from improving maternal mortality in rural Nepal, to mechanisms of placental aging, to the development of nanoparticles targeted to myometrial cells. He has published over 300 papers on the physiology of human birth, including a single author review in the New England Journal of Medicine and has written for Nature, Nature Medicine, Scientific American, Science Translational Medicine, Nature Communications and many specialist journals such as AJOG, Endocrinology and JCEM.

For publication in *Experimental Physiology*

Experimental Physiology
A Publication of The Physiological Society
EP

Wednesday 10 July • 12:00 – 13:30
Main Arena, Ground Floor
Lunch

Wednesday 10 July • 12:00 – 13:30
The Balmoral Suite, Ground Floor
The Annual General Meeting, The Physiological Society

Council look forward to welcoming Members to the 2019 Annual General Meeting (AGM) of The Physiological Society which will be held in the Balmoral Suite at the Aberdeen Exhibition and Conference Centre, on 10 July 2019.

Registration will open from 11:45 and the AGM will commence at 12:00 and will conclude at 13:30. Lunch will be provided.

Full, Fellow and Honorary Members have the right to attend and vote at the AGM. Affiliates and Undergraduates have the right to attend the AGM but may not vote.

The AGM is an opportunity for reflection and discussion and much has happened over the last year that we are looking forward to discussing.

The draft agenda is as follows:

1. To elect the Chair
2. Minutes of the Annual General Meeting held on 16 September 2018
3. To stand in memory of deceased Members
4. To note the 2019 Honorary Members
5. To receive and consider a report by the President
6. To receive and consider a report by the Chief Executive
7. To receive and consider the Trustees' Annual Report and Accounts for the year ended 31 December 2018
8. To note the 2020 subscription rates
9. To appoint the auditors
10. Ordinary resolution to re-appoint haysmacintyre LLP(Chartered Accountants) as the auditors for The Society until the next annual general meeting and to authorise Council to fix their remuneration. To be effective, this resolution must be passed by a simple majority of Members voting (in person or by proxy) on a poll taken in such manner as the chair directs.
11. To review and consider a revised Membership Code of Professional Conduct
12. To discuss motions formally submitted by Members
13. To receive and consider a report by the Editor-in-Chief of *The Journal of Physiology*
14. To receive and consider a report on behalf of the Editor-in-Chief of *Experimental Physiology*
15. To receive and consider a report by the Editor-in-Chief of *Physiological Reports*
16. Any other business

Milestone achievements in anion transporter research

Wednesday, 10 July • 13:30 – 15:00
Gordon A Suite, First Floor

Organiser: Ursula Seidler, Hannover Medical School, Germany
Co-organiser: Vinciane Saint-Criq, Newcastle University, UK

Speakers

13:30 Min-Goo Lee, Yonsei University, Seoul, Korea
SA051 Molecular basis for dynamic change in the bicarbonate permeability of anion channels

14:00 Roberta Benedetto, University of Regensburg, Germany
SA052 Anion channels of the Anoctamin/TMEM16 family as modulators of Ca2+ signalling and mucin secretion

14:15 Sara Bertelli, Istituto di Biofisica, CNR, Italy
SA053 The Volume Regulated Anion Channel: from molecular identification to physiological roles and 3D structure

14:30 Lane Clarke, University of Missouri, USA
SA054 The consequences of altered Wnt signaling in the cystic fibrosis intestine

The muscle spindle: exciting new insights from an old system

Wednesday, 10 July • 13:30 – 15:00
Boyd Hall, Ground Floor

Organiser: Guy Bewick, University of Aberdeen, UK

Speakers

13:30 Timothy Cope, Georgia Tech, USA
SA055 Chemotherapy-induced pathophysiology of muscle spindles in rats

14:00 Eran Assaraf, Weizmann Institute, Israel
Piezo2 is essential for the maintenance of skeletal integrity by acting as a key regulator of the proprioceptive system

14:15 Bridgette Watkins, LMU Munich, Germany
SA056 Altered muscle spindle function in mouse models of muscular dystrophy

14:30 Katherine Willkinson, San Jose State University, USA
SA057 Diet induced obesity alters muscle spindle afferent mechanosensation and Hoffmann's Reflex excitability in adult mice of both sexes

Understanding complex behaviours in the microcirculation: from blood flow to oxygenation

Wednesday, 10 July • 13:30 – 15:00
Fleming Auditorium, Ground Floor

Organiser: Geraldine Clough, University of Southampton, UK
Co-Organiser: Jefferson C Frisbee, Western University, Canada

Speakers

13:30 Jefferson C Frisbee, Western University, Canada
SA058 Shifted vascular optimization: The emergence of a new arteriolar behaviour with chronic metabolic disease.

14:00 Sarah B Withers, University of Salford, UK
SA059 Perivascular adipose tissue – an immune cell metropolis

14:15 Manasi Nandi, King's College London, UK
SA060 Extracting new information from old waveforms: Attractor reconstruction where maths meets medicine

14:30 Andrew J Chipperfield, University of Southampton, UK
SA061 Multi-scale, multi-domain analysis of microvascular flow dynamics

For publication in *Experimental Physiology*

Experimental Physiology
A Publication of The Physiological Society
EP

Cardiac & Respiratory Physiology C

Wednesday, 10 July • 13:30 – 15:00
Crombie B Suite, Ground Floor

13:30 Terje Kolstad, University of Oslo, K.G. Jebsen Center for Cardiac Research, Norway
C013 Ca2+/Calmodulin-Dependent Protein Kinase II Activation Promotes Ryanodine Receptor Dispersion and Dysfunction During Heart Failure

13:45 David Hutchings, University of Manchester, UK
C014 Dual antiarrhythmic properties of phosphodiesterase-5 inhibitors suppress Ca2+ waves in systolic heart failure

14:00 Kim Hellgren, University of Manchester, UK
C015 Adult mitochondria show sexual dimorphism after prenatal hypoxia

14:15 Eline Huethorst, University of Glasgow, University of Glasgow, UK
C016 Substrate affects contractile behaviour of hiPSC derived cardiomyocytes

14:30 Grace Anderson, King's College London, UK
C017 Do repolarisation abnormalities disrupt calcium handling and contribute to impaired diastolic function in heart failure?

14:45 Svetlana Mastitskaya, University College London, UK
C018 Antiarrhythmic effects of glucagon-like peptide-1

Human & Exercise Physiology C

Wednesday, 10 July • 13:30 – 15:00
Gordon B Suite, First Floor

13:30 Matthew Brook, University of Nottingham, UK
C067 Human disuse atrophy may be wholly explained by sustained declines in muscle protein synthesis in the absence of increased muscle protein breakdown

13:45 Joseph Barlow, Hull York Medical School, UK
C068 Compromised skeletal muscle stem cell function in a mouse model of hyperlipidaemia and atherosclerosis

14:00 George Pavis, University of Exeter, UK
C069 Transcriptional pathways of skeletal muscle protein synthesis and turnover are associated with the post-exercise protein and polyphenol supplementation mediated recovery from maximal eccentric contractions

14:15 Tom Jameson, University of Exeter, UK
C070 Post-Exercise and Pre-Sleep Protein-Polyphenol Supplementation Attenuates NF-kB Related Signalling and Improves Recovery following Muscle-Damaging Eccentric Exercise

14:30 Brian Carson, University of Limerick, Ireland
C071 The effect of sprint interval training in fasted and carbohydrate-fed states on exercise performance including inter-individual adaptive responses in recreationally active males

14:45 Damian Bailey, University of South Wales, UK
C072 Gravitational transitions induce systemic oxidative-nitrosative stress and cerebral hyperperfusion in humans

Metabolism & Endocrinology C

Wednesday, 10 July • 13:30 – 15:00
Crombie A Suite, Ground Floor

13:30 Pola Verschoor, University of Aberdeen, UK
C085 A novel protein regulator of adipogenesis

13:45 Nicola Aberdein, Sheffield Hallam University, UK
C086 Leptin differentially remodels vertebrae and tibia trabecular bone independent of load in vivo

14:00 Nozomi Itani, King's College London, UK
C087 Effect of maternal resveratrol administration on offspring sugar preference and glucose tolerance in a rat model of obese pregnancy

14:15 Shelley Harris, University of Oxford, UK
C088 5β-reductase (AKR1D1) deletion drives hepatic inflammation, fibrosis and tumour development in vitro and in vivo

14:30 Cláudia Batista, NOVA Medical School | Faculdade Ciências Médicas, Universidade Nova de Lisboa, Portugal
C089 Carotid sinus nerve denervation improves hepatic function in young and old animals with metabolic dysfunctions exacerabted by long-term hypercaloric diet consumption

14:45 Janine Dovey, Cardiff University, UK
C090 Grazing induces phasic preference for high-fat diet in male rats

Exhibitors' Catalogue - Alphabetical order

Exhibitors' Catalogue - Numerical order

ADInstruments STAND 1

ADInstruments builds innovative solutions to advance life science research and education. Our PowerLab data acquisition units and LabChart software are used in more than 10,000 institutions across the world. We provide complete solutions for research in areas such as cardiovascular, respiratory and exercise physiology.

Our education software solutions, Lt and LabStation, provide a suite of pre-written Physiology experiments and data can be captured and analysed and reports created in one platform. Our authoring tools allow our lessons to be edited to suit educators' needs, or entirely new lessons to be developed. Lt and LabStation link to our teaching PowerLab hardware and we have a wide range of transducers to allow students to study physiology and understand key concepts.

At Physiology 2019, we will be displaying a range of hardware and software including our updated 26T teaching PowerLabs, new BioAmplifiers, updated Equivital wireless physiological monitoring system and Millar Pressure Volume recording systems. You can also get hands-on with our Lt educational software and test your own physiology with our grip strength competition.

We will be running an Industry Symposium on Monday 8th July at 13:15 in the Balmoral Suite 'Lt: an online platform for Physiology teaching, laboratories and assessment' and hope you can join us there.

Aurora Scientific

STAND 23

Aurora Scientific provides solutions for measuring the dynamic physical properties of muscle and connective tissue. Muscle mechanics systems cover the range from single myocyte to whole large-animal in-situ. Products: Muscle Lever Systems, Force Transducers, High-Current Stimulators, Test Apparatus and Software. New Products: Dynamic Muscle Analysis Software with high throughput module.

BIOPAC STAND 19

BIOPAC offers high-quality research and educational tools for physiology labs around the world.

Biopac Student Lab (BSL) is an easy-to-implement teaching solution that increases student engagement and saves professor time. Educators can get started quickly with over sixty-five lessons available in BSL, or they can modify and customize their lessons to align with specialized curriculum. BSL software guides students through BSL lessons with full-color onscreen instructions, a detailed lab manual, and embedded procedure videos and data samples. "Smart" electrodes and transducers employ sensors that allow the software to communicate with them to ensure that the students are using the correct devices and collecting good data; it's like having a teaching assistant in a box. Curriculum includes Animal and Human Physiology, Exercise Physiology, Biology, Psychophysiology, Neurophysiology, Biomedical Engineering, Pharmacology, and Health Sciences.

BIOPAC research products help researchers collect and analyze data for a wide-range of experiments, including ECG, EMG, EEG, EDA/GSR, RSP, Blood Pressure, Impedance Cardiography, and fNIR Brain Optical Imaging. In addition to a full line of in-lab, wired solutions, BIOPAC's wireless physiology measurement solutions ensure greater human subject comfort and freedom of movement.

Cited in over 32,000 peer-reviewed journals, BIOPAC is the premier choice for life science educational hardware and software.

bio-techne

STAND 30

Bio-Techne® unites some of the most distinguished brands within Life Sciences including R&D Systems®, Novus Biologicals®, Tocris Bioscience ®, ProteinSimple® and Advanced Cell Diagnostics®. Together we manufacture a range of high-quality reagents, innovative protein analysis platforms, diagnostic technologies and custom manufacturing services tailored to physiology research.

Our product range includes:
Proteins - R&D Systems provides over 4900 recombinant and natural proteins spanning many species. Providing GMP-grade, animal free, custom services and biomarker screening services.
ELISAs and Luminex® assays - Our Quantikine® and DuoSet® ELISA kits are the gold standard. We are experts in bead-based multiplex assays, providing high performance assays, MAGPIX® System, Luminex® 200® and FLEXMAP 3D®.

Protein analysis platforms - ProteinSimple instruments for Simple PlexTM assays, Simple WesternTM assays, Single-Cell Westerns, next generation analytical and iCETM platforms.

Antibodies - Over 200,000 antibody products from Novus Biologicals and R&D Systems in multiple conjugates and species. Custom antibody generation, testing, purification and conjugation services.

RNA (ISH) - Advanced Cell Diagnostics (ACD) provides products and services based on its advanced in situ hybridization (ISH) assay RNAscope® Technology, capable of visualising genes expressed at a single-molecule RNA sensitivity, localising and quantifying the level of expression.

British Neuroscience Association STAND 17

The British Neuroscience Association (BNA) is the largest UK organisation representing and promoting neuroscience and neuroscientists.

Our members' interests cover the whole range of neuroscience, from ion channels to whole animal behaviour to real-life applications in the clinic and beyond.

The origins of the BNA stretch back to the 1960s, when informal meetings of neuroscientists in the pub became formalised into what was then known as the Brain Research Association.

The BNA now has around 2000 members and looks forward to the next 50 years being even more transformative and exciting than the first.

Cairn Research STAND 28

Cairn Research is an independent scientific instruments company based in Faversham, Kent.

We design, manufacture and support specialist research equipment for the biological sciences, in particular fluorescence microscopy and electrophysiology.

We have long-established expertise in using optical techniques to measure intracellular ion concentrations as well as knowledge of all aspects of biological microscopy and macroscopy, including experimentally related techniques such as optogenetics, flash photolysis, patch clamping and bioluminescence. Our aim is to provide versatile but affordable equipment with high sensitivity and time resolution. We are a research led business and are always happy to discuss new ideas.

Cambridge Electronic Design STAND 24

Cambridge Electronic Design produces the 1401 range of data acquisition laboratory interfaces. These are recognised around the world as the essential recording systems in thousands' of laboratories.
Coupled with our Spike2 & Signal software, the combination becomes a very versatile and easily customisable system. A built-in script language enables the user or CED to access all parts of data acquisition and analysis, including highly-accurate waveform output. This versatility has made CED systems the gold standard for many laboratories and are flexible enough to accommodate changes in your needs.

Spike2 is designed as an intelligent chart recorder able to capture waveforms, events and digital markers over a long time period. Spike shape discrimination and feature detection tools make analysis straight-forward. Outputs consisting of waveforms and digital pulses can be easily produced using a drag-&-drop graphical interface.

Signal forms a highly versatile oscilloscope for evoked responses including LTP, LTD, TMS, patch and voltage clamp.(including dynamic clamp). Extensive control of stimulators is built-in with random and pseudo random stimulus presentation easily configured.

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DATA ACQUISITION & ANALYSIS

Experimental Physiology STAND 4/5/6/7

Experimental Physiology has been publishing discovery in physiology since 1908. The journal focuses on the translation and integration of research, specifically manuscripts that deal with both physiological and pathophysiological questions that investigate gene/protein function using molecular, cellular and whole animal approaches. Methodological papers are encouraged, as are papers that use computational models to further our understanding of physiological processes.

The journal is published once a month.

The journal's Editor-in-Chief is Mike Tipton, University of Portsmouth, UK.

Experimental Physiology

A Publication of The Physiological Society

History and Archives, The Physiological Society STAND 8/9

Founded in 1876, we've been championing the advancement of physiology ever since. Visit our stand and you can find out more about our founders, first Honorary Members, history of women in The Society, our stolen mascot and more.

Ionoptix

STAND 22

IonOptix manufactures high-performance fluorescence and cell dimension data acquisition systems.

We are well known for our popular Calcium and Contractility System for isolated adult and iPS-derived cardiomyocytes. We are proud to offer our new MultiCell high-throughput system for the fast acquisition and analysis of calcium and contractility data, capable of increasing your data collection by several orders of magnitude.

Always innovating, IonOptix also offers a chamber to measure calcium and force in whole muscle. Additionally, our C-Stretch electromechanical stimulator will help you improve the way you differentiate your cardiomyocytes – easy-to-use with the new C-Pace Navigator software.

The Journal of Physiology STAND 4/5/6/7

The Journal of Physiology publishes research that significantly advances our knowledge of physiology and increases our understanding of how the body functions in health, and disease. Published since 1878, this prestigious journal has published papers from over 40 Nobel laureates. It is published twice per month.

The Journal of Physiology welcomes research papers in all areas of physiology that present new physiological principles or mechanisms. Papers are welcomed on work at the molecular level, the level of the cell membrane, single cells, tissues or organs and on systems physiology.

The Journal of Physiology's Editor-in-Chief is Kim E. Barrett, University of California, San Diego, USA.

The Journal of
Physiology

LI-COR STAND 27

LI-COR® Biosciences offers a complete discovery process to give you accurate, reproducible data, including imaging platforms, analysis software, standardized protocols, training, and validated IRDye® infrared dye reagents for protein and molecular imaging.

Our complete solutions for Western blot imaging include the Odyssey® CLx and Odyssey Fc Infrared Imaging Systems and unique IRDye Infrared Dye-based antibodies and reagents. LI-COR also offers the C-DiGit® Blot Scanner for chemiluminescent Western blots as an affordable digital replacement for film.

Molecular imaging on the Pearl® Trilogy now features a bioluminescence channel. Using revolutionary FieldBrite™ XT2 optical technology results in unparalleled dynamic range that never saturates.

MRC Harwell Institute STAND 29

MRC Harwell, part of UK Research and Innovation (UKRI), is an international centre for mouse genetics and functional genomics and is a lead partner in the International Mouse Phenotyping Consortium (IMPC). MRC Harwell consists of two units; the Mary Lyon Centre (MLC) and the Mammalian Genetics Unit (MGU). As an international facility for mouse functional genomics, the MLC provides a wide range of services for the global scientific community, including the production, breeding and archiving of genetically altered mouse lines and an extensive array of phenotyping tests. The MGU undertakes research to advance medicine by expanding our knowledge of the genetic bases of human disease within its research programmes, which cover lifetime studies from developmental abnormalities through to diseases of ageing.

Nanion

STAND 26

Nanion is a leading provider of automated patch clamp (APC) electrophysiology systems with throughput capabilities ranging from a single cell up to fully automated high throughput screening (HTS) instruments recording from 768 cells simultaneously. Founded in 2002, Nanion has expanded its product range over the years to include in vitro systems for membrane pump and transporter recordings, bilayer recordings, and contractility measurements (impedance) from beating monolayers of cells, e.g. induced pluripotent stem cell-derived cardiac myocytes (iPSC-CMs), and confluency measurements of, e.g. hepatocytes for hepatotox screening using electrical impedance. Nanion's instruments combine high performance with user-friendly interfaces making them an ideal choice for academia, biotechnology, CROs and the Pharma industry. Visit us at booth 26 to find out about our newest instrument for patch clamp experiments – the world's smallest patch clamp rig just got smaller!

Physiological Reports

STAND 4/5/6/7

Physiological Reports is an open access journal with all articles free to all readers. It is published online only and all papers are published upon proof correction in final form. It is a collaboration between The Physiological Society and the American Physiological Society.

Physiological Reports publishes original research in all areas of basic, translational and clinical physiology and allied disciplines. It publishes peer-reviewed papers that are accepted solely on the basis of scientific rigor, adherence to technical and ethical standards, evidence that the data support the conclusions and being sufficiently well-conceived.

The Physiological Society STAND 4/5/6/7

The Physiological Society brings together over 3,800 scientists from over 60 countries. Since its foundation in 1876, its Members have made significant contributions to our knowledge of biological systems and the treatment of disease. Please visit our History of The Society page to learn more.

We promote physiology and support those working in the field by organising world-class scientific meetings, offering grants for research, collaboration and international travel, and by publishing the latest developments in our leading scientific journals, The Journal of Physiology, Experimental Physiology and Physiological Reports.

The Society also runs events for the general public on how physiology relates to everyday life, and for students who may be considering physiology as a career.

Membership is available for all career stages, from undergraduate level to senior level scientists.

The Society was one of the first member bodies to sign the Science Council Declaration on Diversity, and is committed to promoting a diverse scientific workforce.

World Precision Instruments STAND 20

We are a leading laboratory product manufacturer focused on providing our customers with cutting-edge laboratory instruments at cost-effective prices.

50 years ago, we designed and manufactured electrophysiology equipment. Now, we are in several areas of study, the core being in tissue and cell biology, animal physiology and electrophysiology.

On display will be:

- Our microinjection systems, UMP3;
- Pullers and manipulators from Sutter Instrument;
- ECGenie device for measuring ECG in freely moving rodents.

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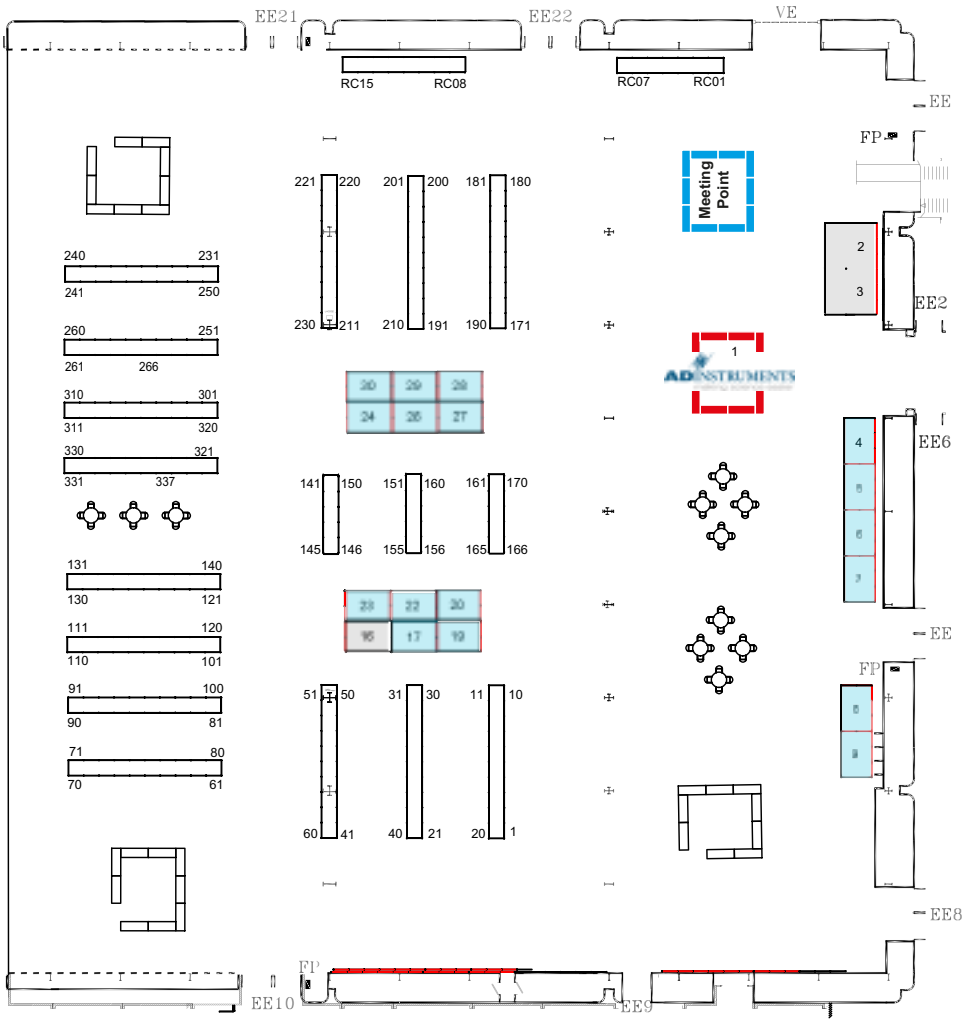
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Are you a researcher within five years of qualification? Would you like **£1000** to fund your next research idea?

Enter our Early Career Researcher kick-starter competition at **Physiology 2019** for a chance to win a **£1000** kick-starter fund. Visit **The Physiological Society stand (#6) between 8th – 10th July** to film your **30-60 second** elevator pitch!

What is an elevator pitch?

Imagine you're in a lift with the funder for research at your faculty. You have their undivided attention for 30-60 seconds – pitch your research idea for funding within that time, to see if you can convince them to help you kickstart your project.

What your pitch needs to cover...

What are you researching?
What are the challenges in your area of research?
What problem you are trying to solve?
Why is it important?
What will the funding enable you to do?

All video entries will be reviewed, post-conference, by a panel of senior journal editors and a prize winner will be announced in the weeks following.

We look forward to receiving your video submissions!

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The Physiological Society
The Journal of Physiology
Experimental Physiology
Physiological Reports
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