



# FEPS

## Federation of European Physiological Societies

### FEPS NEWSLETTER

August 2012

#30

Letter of the President of FEPS 1

Update on IUPS 2013 2

Acta Physiologica 11

<http://www.feps.org>

#### Secretariat

#### FEPS Newsletter:

Bianca Feenstra  
Dept. of Physiology  
University Maastricht  
P.O. Box 616  
6200 MD Maastricht  
the Netherlands

Phone: +31-43-3884003

Fax: +31-43-3884166

[B.feenstra@maastrichtuniversity.nl](mailto:B.feenstra@maastrichtuniversity.nl)

#### Executive Board of FEPS:

David Eisner  
Manchester, UK  
President

Ulrich Pohl  
Munich Germany  
Past President

Ger van der Vusse  
Maastricht, the Netherlands  
Secretary General

Bryndis Birnir  
Uppsala, Sweden  
Treasurer

Ginés M. Salido  
Cáceres, Spain  
Member

Alexej Verkhatsky  
Manchester, UK  
Member

<http://www.facebook.com/pages/Federation-of-European-Physiological-Societies/131608756896823>

---

## Letter of the President of FEPS

---

Dear Colleagues,

I am looking forward very much to the upcoming FEPS meeting in Santiago de Compostela and hope to see many of you there.

Our colleagues from the Iberian Peninsula are to be thanked for the enormous amount of work they have put in to the organization (see also [www.FEPS2012.org](http://www.FEPS2012.org) for detailed information).

For those of you who have never been to Santiago de Compostela, I strongly recommend setting time aside to be a tourist and enjoy this beautiful location.

This edition of the FEPS Newsletter concentrates on the 2013 meeting.

FEPS has partnered with the Physiological Society and the International Union of Physiological Sciences (IUPS) to hold the next IUPS meeting in Birmingham UK from 21-26 July.

A particular highlight of the 2013 meeting will be the Annual FEPS Lecture to be given by Dr Juleen Zierath from the Karolinska Institute.

FEPS is also helping to organize the Young Physiologists Symposium as well as several scientific symposia. As well as these events, the programme comprises 30 keynote lectures and over a hundred symposia. Something for everyone!

With all best wishes,

David Eisner  
President of the Federation of European Physiological Societies





## Update on IUPS 2013

The Congress is now a very short twelve months away. As announced previously, the meeting will be held in the International Conference Centre (ICC) in the centre of Birmingham.

This provides not only an outstanding environment for the science but, equally importantly, for informal discussions, close to a large number of hotels and surrounded by cafes, restaurants and, last but not least, the typical British pub. For those of you thinking of combining the meeting with a holiday, Birmingham is ideally situated to explore much of England and Wales.

The International Scientific Programme Committee (ISPC) has met and selected keynote lecturers and symposia. The Opening Ceremony will contain a lecture from Roger Tsien (Nobel Laureate in Chemistry). Another 35 keynote lectures will be presented during the meeting, designed to showcase the best of international physiology (**see box 2**).

There will be over 100 half day symposia. Each will have five speakers; three will be senior, established scientists but the other two have been selected to highlight speakers at an early stage of their independent research careers. The early career emphasis will be evident even before the opening ceremony with the first event of IUPS 2013 being the International Young Physiologists Symposium which will provide an informal environment for younger physiologists to present their data and interact.

The list of symposium titles is in **box 3**. Early feedback on the selections has been very positive and we are certain readers will agree that IUPS 2013 will have a tremendous amount of exciting science on offer. The Congress will be preceded by the traditional IUPS residential Teaching & Education workshop (sponsored by ADInstruments), which in 2013 will be hosted in the city of Bristol from 18 to 21 July.

### Box 1 - Registration rates and key dates

<i>Status</i>	<i>Fee before 1 March 2013</i>	<i>Fee from 1 March 2013</i>
Active scientist	£290	£400
Student (undergraduate/ postgraduate/no more than 3 years postdoctorial) Proof of status will be required.	£95	£200
Retired	£95	£200
Accompanying persons (access to exhibition only)	Free	£25

<i>Date</i>	<i>Item</i>
<b>1 September 2012</b>	IUPS travel award application process opens Abstract submission opens Registration opens Accommodation bookings opens
<b>1 November 2012</b>	IUPS travel award application process closes Abstract submission closes (For those applying for IUPS travel awards)
<b>1st two weeks of January 2013</b>	Notification of IUPS travel awards
<b>31 January 2013</b>	Abstract submission closes (For those not applying for IUPS travel awards and for Members of The Physiological Society)
<b>28 February 2013</b>	Early registration closes Deadline for Members of The Physiological Society travel awards.
<b>1st two weeks of April 2013</b>	Notification of Society Member travel awards
<b>30 June 2013</b>	Online registration closes
<b>18-21 July 2013</b>	IUPS Residential Teaching Workshop, Bristol, UK (sponsored by <a href="#">ADInstruments</a> )
<b>20-21 July 2013</b>	International Young Physiologists' Symposium (IYPS), University of Birmingham, UK
<b>21-26 July 2013</b>	<b>IUPS 2013</b>

Planning is progressing well and as the Congress nears, excitement is mounting.

**Registration, abstract submission and accommodation booking (see box 1)** will all open on **1 September 2012**, so mark this date and tell your friends, colleagues and collaborators. Bookmark the website [www.iups2013.org](http://www.iups2013.org) for all the latest news and updates.

Stage two of the website (the science), will be launched in August 2012. Travel grants will be available to support attendance. Further details will appear online in August 2012.

IUPS 2013, like all previous IUPS meetings is a collaboration between the hosts (The Physiological Society) and IUPS. At an early stage of planning the collaboration was enhanced by two new partners: The Federation of European Physiological Societies (FEPS) and The Scandinavian Physiological Society (SPS). These organizations have decided to hold their usual, annual meetings at IUPS 2013. We are now also delighted to be able to formally announce our partnership with both the European Society for Microcirculation (ESM) and the European Vascular Biology Organisation (EVBO) who have agreed to join the IUPS Congress in 2013 (see box 4).

## Box 2 – Plenary and Keynote lectures

<i>Name</i>	<i>Country</i>	<i>Provisional Title</i>
Takayuki Asahara	Japan	Stem cell biology for vascular medicine
Dennis Brown	USA	Sensing, signalling and sorting pathways in kidney epithelial cells

<i>Name</i>	<i>Country</i>	<i>Provisional Title</i>
Geoffrey Burnstock	UK	Purinergic signalling
Barbara Cannon	Sweden	Brown adipose tissue: the mammalian prerogative
Peter Carmeliet	Belgium	Targeting endothelial metabolism : principles and strategies
William A. Catterall	USA	Structure and function of voltage - gated sodium channels at atomic resolution
Sumantra Chattarji	India	Stress, memory, and the amygdala
Heping (Peace) Cheng	China	Superoxide flash: Elemental mitochondrial ROS signalling
Iain Clarke	Australia	3R's: Reproductive Regulation Revised
Sandra Davidge	Canada	New insights in the fetal origins of adult cardiometabolic disease
Karl Deisseroth	USA	To be confirmed
Elisabetta Dejana	Italy	Transcriptional regulation of vascular development
Graham J Dockray	UK	Gastrointestinal hormones and the dialogue between gut and brain
Russell Foster	UK	Your body clock and sleep: What keeps you ticking
Eric Gouaux	USA	The molecular mechanisms of signalling at chemical synapses
Mark Hanson	UK	Physiological insights into the developmental origins of non - communicable disease
Peter Hunter	New Zealand	The IUPS Physiome Project and the role of computational modelling in physiology
Thomas M. Jessell	USA	Assembly and function of spinal sensory - motor circuits
Gervaise Loirand	France	Rho proteins in cardiovascular physiology and diseases
Eleanor A Maguire	UK	How are memories represented and recollected by the human brain?
Göran E. Nilsson	Norway	Respiratory and neural consequences for fish of a warmer and more carbonated future
Denis Noble	UK	The reintegration of physiology into evolutionary biology

<i>Name</i>	<i>Country</i>	<i>Provisional Title</i>
Akinori Noma	Japan	Mathematical analysis of cardiac and pancreatic beta cell functions by applying mathematical methods to their comprehensive cell models
Daniela Pietrobon	Italy	Neuronal calcium channels and migraine
Patrik Rorsman	UK	Role of ATP - regulated potassium channels in pancreatic alpha - and beta - cells
Tamara Rosenbaum	México	TRPV1 channels: from molecules to physiology
Robson AS Santos	Brazil	The renin - angiotensin system: New concepts and perspectives
Erin M. Schuman	Germany	Protein synthesis and degradation at synapses.
Mala Shah	UK	Cortical HCN channels: function, trafficking and plasticity
Hee - Sup Shin	Rep. of Korea	T - type calcium channels in control of consciousness and cognition
Olusoga Sofola	Nigeria	Teaching and research in physiology in Sub - Saharan Africa, achievements and challenges
Roger Y. Tsien	USA	Breeding and building molecules to image physiology and disease
Julen R. Zierath	Sweden	Health - promoting effects of exercise in diabetes and obesity: From molecular mechanisms to clinical action

### Box 3 – Scheduled Symposia

**Understanding the brain mechanisms of chronic pain** Jun Chen (*China*) and Irene Tracey (*UK*)  
**From perception to action: neurophysiological mechanisms of conscious visual perception** Erik Cook (*Canada*) and K Krug (*UK*)  
**Inhibitory Synapses: Ionic Shift Plasticity** Melanie Woodin (*Canada*) and Peter Blaesse (*Finland*)  
**Shedding light in the neurophysiological black box** Hiromu Yawo (*Japan*) and Dirk Trauner (*Germany*)  
**Neurons, synapses and circuits in the auditory system: physiology, pathophysiology and potential therapeutics for hearing disorders.** Ricardo Leao (*Brazil*) and Ana Belen Elgoyhen (*Argentina*)  
**Neuronal inhibition dynamically regulates neuronal excitability.** Bryndis Birnir (*Sweden*) and Brandon Stell (*France*)  
**Membrane potential investigated with voltage sensitive dyes** Marco Canepari (*France*) and Carl Petersen (*Switzerland*)  
**Multidisciplinary approaches to understanding synaptopathies** John Jefferys (*UK*) and Sumantra Chattarji (*India*)  
**Imaging mouse visual cortex function and plasticity** Mark Hübener (*Germany*) and Frank Sengpiel (*UK*)

**Network oscillations: binding brain areas to functional structures** Attila Sik (*UK*) and Gyorgy Buzsaki (*USA*)

**Molecular mechanisms of transmitter release** Jens Rettig (*Germany*) and Tao Xu (*China*)

**Neurotransmitter transporters: impact on nerve cell excitability and function** Francisco Suárez (*Spain*) and Susan Amara (*USA*)

**The glutamatergic synapse: a neurodegenerative & psychiatric disease target** David Wyllie (*UK*) and Lynn Raymond (*Canada*)

**Auxiliary AMPA Receptor subunits: their role in central synaptic transmission** Stuart Cull - Candy (*UK*) and Mark Farrant (*UK*)

**The role of intrinsic electrical activity in the maturation and refinement of the auditory and visual systems** Michael Evans (*UK*) and Corne Kros (*UK*)

**Dendritic ion channel function and plasticity** Mala Shah (*UK*) and Michael Hausser (*UK*)

**The Good, the Bad and the Ugly: New Mechanisms of Signalling in the Injured Spinal System** Anne King (*UK*) and Jose Antonio Lopez - Garcia (*Spain*)

**Interplay between neurones, astrocytes and blood vessels** Sergey Kasparov (*UK*) and Maiken Nedergaard (*USA*)

**The activation of skeletal muscles: implications for fatigue** Ole Bækgaard Nielsen (*Denmark*) and Janet Taylor (*Australia*)

**Orchestrating signals towards early therapeutically relevant clinical measures of neurodegeneration** Graham Collingridge (*UK*) and Paul Wren (*China*)

**Ageing, inactivity, exercise and gender: implications to skeletal muscle mass and metabolic function in humans** Paul Greenhaff (*UK*) and Bettina Mittendorfer (*USA*)

**Central versus peripheral neural control mechanisms in man: inputs and outputs** Michael White (*UK*) and Martin Lakie (*UK*)

**Intracellular signalling microdomains in heart** Richard D Vaughan - Jones (*UK*) and Yin Hua Zhang (*South Korea*)

**Hypoxic pulmonary hypertension: mechanisms of pulmonary vascular change and their effect on the right ventricle** Paul McLoughlin (*Ireland*) and Jeremy Ward (*UK*)

**Dysfunctional chemoreceptors: cause or consequence of the symptoms of cardiorespiratory disease?** Prem Kumar (*UK*) and Luciana Gargalloni (*Brazil*)

**Development and functional organisation of neural circuits controlling breathing** Alexander Gourine (*UK*) and Muriel Thoby - Brisson (*France*)

**Cardiac beta - adrenergic signalling in health and disease** Andrew Trafford (*UK*) and Patrick Most (*Germany*)

**Essential role of the vagus nerve for cardiac health and its rescue from disease** David Paterson (*UK*) and Alona Ben - Tal (*New Zealand*)

**Transverse tubules in the heart: normal physiology and involvement in disease** David Eisner (*UK*) and William E. Louch (*Norway*)

**Cardiovascular developments that changed the world** Holly Shiels (*UK*) and Jonathan Stecyk (*USA*)

**Three decades of Ca<sup>2+</sup> sparks and Ca<sup>2+</sup> waves in cardiac muscle** Godfrey Smith (*UK*) and John Bridge (*USA*)

**Molecular basis of cardiac conduction system in disease** Halina Dobrzynski (*UK*) and Mark Boyett (*UK*)

**Understanding the etiology of hypertension.** Thomas Coffman (*USA*) and Hidefumi Waki (*Japan*)

**Recent advances in renin - angiotensin system and implications in health and disease** Mohan Raizada (*USA*) and Genevieve Nguyen (*France*)

**Generation of Respiratory and Sympathetic Activities in Health and Diseases** Benedito Machado (*Brazil*) and Ann Goodchild (*Australia*)

**Contributions of Skeletal Muscle Myopathy to Heart Failure: Novel Mechanisms and Therapies** Mark Chapleau (*USA*) and Elizabeth McNally (*USA*)

**Pathophysiological mechanisms in atrial fibrillation** Ulrich Schotten (*The Netherlands*) and Stephane Hatem (*France*)

**CFTR – Linking physiology, regulation and structure** David Sheppard (*UK*) and Jeng - Haur Chen (*China*)

**Physiomics of TRP ion channels** Joost Hoenderop (*The Netherlands*) and Thomas Voets (*Belgium*)

**Atomic structures and molecular mechanisms of voltage - gated and ligand - gated ion channels** Raimund Dutzler (*Switzerland*) and Joao Morais - Cabral (*Portugal*)

**Local calcium signals: mechanism and function** Anant Parekh (*UK*) and Barbara Niemeyer (*Germany*)

**Physiological roles of Non - coding RNAs** Andreas Werner (*UK*) and Laura Poliseno (*Italy*)

**The role of toxic Ca<sup>2+</sup> signals in initiating pancreatitis and promoting pancreatic cancer** Ole Petersen (UK) and Peter Hegyi (Hungary)

**Physiology of protein palmitoylation** Michael Shipston (UK) and Masaki Fukata (Japan)

**Solute and ion cotransporters and exchangers at atomic resolution** Thomas Jentsch (Germany) and Olga Boudker (USA)

**New insights into the acid - base microclimate as an integral regulator of epithelial function in health and disease** Mike Gray (UK) and Ursula Seidler (Germany)

**An integrated approach to the physiology of organic cation transporters** Giuliano Ciarimboli (Germany) and Sophie Gautron (France)

**An update on inherited renal tubular disorders.** Rene Bindels (The Netherlands) and Fiona Karet (UK)

**Insight into the physiological roles of membrane transporters from drug transport studies** Catriona Anderson (UK) and Ikumi Tamai (Japan)

**Current Advances in Structure and Regulation of Epithelial Tight Junctions** Radha Krishna Rao (USA) and Sachiko Tsukita (Japan)

**The role of membrane transporters in tumor growth and metabolism** Stefan Broer (Australia) and Yoshikatsu Kanai (Japan)

**Stem Cells and Tissue Homeostasis** Bettina Wilm (UK) and Sylvia Fre (France)

**Bicarbonate transport in normal and cancerous tissues** Walter Boron (USA)

**High resolution microscopy (nanoscopy) and correlative light and electron microscopy (CLEM)** Katharina Gaus (Australia) and Jennifer Lippincott - Schwartz (USA)

**Potassium channel complexes: dynamic aspects of the assembly and regulation towards their physiological roles** Yoshihiro Kubo (Japan) and Bernard Attali (Israel)

**Voltage - gated calcium channels: novel roles** Annette Dolphin (UK) and Roberto Chiesa (Italy)

**Epithelial Na channels - linking physiology, regulation and structure** David Cook (Australia) and Daniela Rotin (Canada)

**Renal handling of glucose and phosphate** Youfei Guan (China) and Nati Hernando (Switzerland)

**Obesity: Intergenerational programming and consequences** Lucy Green (UK) and Robert Hester (USA)

**Mammalian nutrient sensing** Daniela Riccardi (UK) and Willis Samson (USA)

**Physiology of fasting and starvation** Marshall McCue (USA) and Teresa Valencak (Austria)

**Developmental programming of cardiovascular and renal disease in adulthood** Jennifer Pollock (USA) and Abigail Fowden (UK)

**Mother, placenta, fetus and life long health** Rohan Lewis (UK) and Susan Greenwood (UK)

**Physiology and mechanisms of the circadian control** Karl - Heinz Herzig (Finland) and Greg Atkinson (UK)

**Brown fat: recent advances in physiology and regulation** John Speakman (China) and Michael Symonds (UK)

**Physiological solutions in symbiotic systems** Monica Medina (USA) and Michele Weber (USA)

**Myometrial physiology - time to translate?** Susan Wray (UK) and Jorge Cavajal (Chile)

**The Physiology of Rapid Responses to Estrogen** Brian Harvey (Ireland) and Ellis R Levin (USA)

**Ageing - epigenetic mechanisms underlying lifelong health and wellbeing** Susan Ozanne (UK) and Wolf Reik (UK)

**Mechanistic Insights into Genotype - to - Phenotype Relationships** Daniel Beard (USA) and Elena Marchiori (The Netherlands)

**Peptide modulation of hedonic food intake** Gareth Leng (UK) and Zsolt Liposits (Hungary)

**Physiology and Evolution: has physiology become relevant again to evolutionary biology?** Denis Noble (UK)

**New Advances in the Physiome and Systems Biology** Andrew McCulloch (USA) and Chae Hun Leem (South Korea)

**The Case for Comparative and Evolutionary Physiology in Clinical Research** Michael Joyner (USA) and Sandy Martin (USA)

**Gastrointestinal Flexibility: Ecology, Evolution and Microbial Symbiosis** Hannah Carey (USA) and Stephen Secor (USA)

**Epigenetic and post - translational modification of the diseased heart** Loren Wold (USA) and Lea Delbridge (Australia)

**Evolution of the vertebrate four - chambered heart** James Hicks (USA) and Antoon Moorman (The Netherlands)

**Hypometabolism, hypothermia and hibernation** Shi - Qiang Wang (China) and Esa Hohtola (Finland)

**Brain Imaging - an ethical time bomb?** Joanna Wardlaw (UK) and Hank Greely (UK)

**Synthetic Biology: scientific progress or ethical dilemma?** Penny Moody - Corbett (*Canada*) and Theophile Godfried (*Belgium*)

**Historical perspective on early physiology, 1870 - 1960** Jonathan Reinartz (*UK*)

**Using technology to improve millennial students' learning** Xian Wang (*China*) and Jonathan Kibble (*USA*)

**Using narratives and stories to enhance learning** Frank Mojiminiyi (*Nigeria*) and Penelope Hansen (*Canada*)

**Competency - based education in physiology: a global perspective** William Galey (*USA*) and Dee Silverthorn (*USA*)

## Box 4 – ESM and EVBO Scheduled Symposia

Joint Meeting

At IUPS 21-26 July 2013  
Birmingham, UK

27th EUROPEAN SOCIETY for MICROCIRCULATION hosted by the  BMS  
AND  
7th EUROPEAN VASCULAR BIOLOGY ORGANISATION  

**Epigenetics: A new regulator of gene expression and cardiovascular diseases** Seppo Yla-Herttuala (*Finland*) and Loren Wold (*USA*)

**Nanojunctions and calcium signaling in smooth muscle cells: from contraction and migration to gene expression** Mark Evans (*UK*) and Casey van Breeman (*Canada*)

**Intercellular communications in the vasculature: from physiology to pathophysiology** Christelle Guibert (*France*) and Cor de Wit (*USA*)

**Vascular calcification** Yvonne Alexander (*UK*) and Cecilia Giachelli (*USA*)

**Cellular senescence in cardiovascular disease** Paul Evans (*UK*) and Michael Goligorsky (*USA*)

**Cardiovascular regulation by miRNAs** Giovanni Mann (*UK*) and E Olson (*USA*)

**Perivascular fat: role in metabolic and cardiovascular disease** Boy Houben (*The Netherlands*) and A Heagerty (*UK*)

**Hydrogen sulfide in the vascular system: diverse roles and mechanisms** Akos Koller (*Hungary*) and Phil Aaronson (*UK*)

**Collateral vessels: Growth mechanisms and functional characteristics** Ulrich Pohl (*Germany*) and Mary Burnett (*USA*)

**Mechanical stress and vascular remodelling** Qingbo Xu (*UK*) and Nanping Wang (*China*)

**Microvascular networks: causes and consequences** Axel Pries (*Germany*) and Ed van Bavel (*The Netherlands*)

**Understanding microcirculatory blood flow using quantitative approaches** Jeff Frisbee (*USA*) and Sylvie Lorthois (*France*)

**Macrophage phenotype modulation in atherosclerosis** Klaus Ley (*USA*) and Sussan Nourshargh (*UK*)

**Leukocyte recruitment in inflammation** Markus Sperandio (*Germany*) and Paul Kubes (*Canada*)

**Stem and progenitor cells in vascular remodelling and repair** Neena Kalia (*UK*) and Mark Majesky (*USA*)

**Signalling mechanisms that regulate vascular permeability** Paul Fraser (*UK*) and Dolly Mehta (*USA*)

**Role of TRP channels in the cardiovascular system** Susan Brain (*UK*) and Scott Earley (*USA*)

**Angiogenesis: growth points** Stuart Egginton (*UK*) and K Alitalo (*Finland*)



## How you can get involved in IUPS?



Suggestions for topical and controversial **Point–Counter - Point sessions** are sought. These minisessions of a maximum of 15 minutes in duration will consist of two individuals debating a specific topic. Please submit your contentious issue that has perhaps polarised current thinking (or might do in future), along with the names of two individuals who might be prepared to speak on the topic from opposite ends of the spectrum. Each session will have a moderator with the audience voting on the overall winner at the end.



### **Top predictions in the physiological sciences – what can we expect in the next 50 years!**

We would like to solicit some of your predictions of where we will be 50 years from now (scientifically speaking that is). The prediction should be in the form of a one - line headline statement and be aimed at a general public audience. Selected predictions will be judged by a panel of experts as to the likelihood of coming true and will form part of an on - line discussion forum, prior to and during the meeting. Those submitting should be prepared to comment further and be available for media enquiries if asked.



### **Official congress bloggers wanted.**

Are you an established blogger? Fancy reporting on the congress as it happens? Please RSVP to [info@iups2013.org](mailto:info@iups2013.org) telling us who you are and providing a link to a previous blog. Official bloggers will be offered a 50% discount on their registration fee.



### **Twitter - #IUPS2013**

Calling all Tweeters! Make sure you use the official hash tag #IUPS2013 to keep your followers up to date. We will be searching for official tweeters to report on the congress as it happens. If you are an established Tweeter or just starting out, don't be shy.

Suggestions for “**Point–Counter - Point sessions**” and **50 year predictions** should be sent to [info@iups2013.org](mailto:info@iups2013.org) by 1 November 2012.

## Sponsoring & exhibiting

We are always on the look-out for potential sponsors and exhibitors. If you know of any local contacts who you think might be interested in promoting their company, products and services at an IUPS Congress in Europe which hopes to draw up to 5000 participants, do ask them to visit the website where they can view the brochure of opportunities on offer or alternatively they may email [iups@biomedex.co.uk](mailto:iups@biomedex.co.uk) for further details.

We look forward to welcoming you to Birmingham in July 2013!

Bridget Lumb

David Eisner

Nick Boross-Toby

Chair, Organising Committee

Chair, International Scientific Programme Committee

Director, Events & Marketing, The Physiological Society



**[www.iups2013.org](http://www.iups2013.org)**



## List of contents of Acta Physiologica

---

**Volume 205, issue 1, pages 1-188, May 2012**

<http://onlinelibrary.wiley.com/doi/10.1111/apha.2012.205.issue-1/issuetoc>

**Volume 205, issue 2, pages 189-320 June 2012**

<http://onlinelibrary.wiley.com/doi/10.1111/apha.2012.205.issue-2/issuetoc>

**Volume 205, issue 3, pages 321-451 July 2012**

<http://onlinelibrary.wiley.com/doi/10.1111/apha.2012.205.issue-3/issuetoc>

**Volume 205, issue 4, pages 453-550 August 2012**

<http://onlinelibrary.wiley.com/doi/10.1111/apha.2012.205.issue-4/issuetoc>