



FEPS

Federation of European Physiological Societies

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<http://www.feps.org>

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<u>Letter of the President of FEPS</u>	1
<u>Joint meeting of the Slovak Physiological Society, The Physiological Society and FEPS in Bratislava 2007</u>	2
<u>FEPS Teaching Physiology Symposium at the Joint meeting in Bratislava, 2007</u>	3
<u>European Young Physiologists Symposium, Bratislava, September 11, 2007</u>	4
<u>FEPS Travel Fellowships for the Joint Meeting in Bratislava, September 11-14, 2007</u>	5
<u>FEPS keynote lecture by Torben Clausen; abstract and short C.V.</u>	6
<u>Hermann-Rein-Award for outstanding achievements</u>	7
<u>Job Market: new on the FEPS homepage</u>	7
List of contents of the <u>March issue of Acta Physiologica</u>	8
List of contents of the <u>April issue of Acta Physiologica</u>	9

Letter of the President of FEPS

Dear colleagues,

This issue of the Newsletter is almost completely dedicated to the upcoming joint meeting in Bratislava, September 11-14. It is now several years ago that it was decided to have the Slovak Physiological Society, The Physiological Society of UK and Ireland and FEPS to join in Bratislava 2007. As you can see from the pages ahead in this issue, the meeting has much to offer: several Keynote Lectures, the European Young Physiologists Symposium, the FEPS Teaching Physiology Symposium and 15 Symposia covering hot topics of modern physiology. But the final success depends of course on the participants and their contribution with oral presentations and posters. Do not wait until the deadline – register NOW and contribute to the success.

THERE IS ONE IMPORTANT MESSAGE THAT SHOULD NOT BE MISSED! Tell your young colleagues - whom may not receive this Newsletter - that 20-30 Travelling Fellowships is offered to partly cover expenses for the participation as described in this Newsletter. THE DEADLINE FOR THE APPLICATIONS IS May 15, and the applicant will be informed about the result by June 1st – thus 2 weeks before the abstract submission deadline of the Joint meeting (June 15, 2007).

In many scientific Societies announcement of available positions have proved to be valuable for both the Institutions hiring people as well as the scientists looking for positions. FEPS will introduce this service at our Homepage: click on <http://www.feps.org> and **Job market**. There is already one announcement for a PhD position on the Homepage, which illustrates the style we wish to use. Further information can be received from the FEPS secretariat, Ms Sonia Froidmont: FEPS-secretariat@fys.unimaas.nl.

Hans Hultborn,
President of FEPS



**Joint Meeting
of
The Slovak Physiological Society
and
The Physiological Society
and
The Federation of European Physiological Societies
BRATISLAVA, September 11-14, 2007**

Don't miss the opportunity to meet your Physiology colleagues from Europe and abroad. The science and the social atmosphere will be excellent. The program consists, among others, of FEPS supported activities such as :

- European Young Investigators Symposia (EYPS)
- Innovative Methods in Teaching Physiology
- FEPS Keynote lecture given by prof. Torben Clausen entitled „The Na,K-pump in skeletal muscle; physiological and clinical significance“.

During the meeting 15 symposia will be organized about the following topics :

- Cardiac excitation-contraction coupling in health and disease
- Mitochondria: Role in myocyte injury and protection
- Hypothalamic-Pituitary-Adrenocortical axis in health and disease
- Uncoupling proteins—Different roles through the life cycle?
- New aspects in the physiology of the cholinergic system
- Fine tuning of myocardial contractility by myofibrillar regulatory proteins in control and disease
- Role of L-type calcium channels in cellular excitability
- Synergistic control of food intake, energy metabolism and reproduction
- Molecular physiology of integration in neuronal-glia circuits
- Circadian rhythms and melatonin
- Gap junctions in cardiovascular regulations
- Oxygen sensing: From fetal programming to postnatal remodelling
- Control of parturition : Uterus or hypothalamus?
- Spinal and cortical inhibitory interneurons: From synapses to networks
- Kv7 (KCNQ) Potassium channels that are mutated in human disease

Two additional Keynote lectures will be presented by :

- Prof. Ole Petersen, IUPS lecture on „Calcium microdomains: physiology and pathophysiology“
- Prof. Ian C. McGrath, the Physiological Society, lecture on „Regulation of all cell types in blood vessels by catecholamines“

See for more information this issue of the FEPS Newsletter and the website of the joint meeting :
<http://www.joint.conference.sav.sk>

**FEPS Symposium on
„Innovative methods in Teaching Physiology
Developments in ICT in Physiology Teaching“**

**Tuesday, September 11, 2007
14.00-17.00 hrs**

Bratislava, Slovak Republic

This 3rd FEPS Symposium on education in Physiology will concentrate on new developments in computer-supported teaching, and in which the audience will be invited to participate vividly in the discussion.

In this symposium several aspects of innovations in computer-supported learning will be covered, such as:

1. How to introduce and use e-learning.
2. How to build a Physiology course using ICT.
3. Learning sources: Is Google more powerful than a good modern textbook?
4. Sense and non-sense about CSCL (Computer-Supported Collaborative Learning).
5. Computer-based examinations.

The symposium will be organized as such that each of the above mentioned domains will be covered by an expert lecturer in a presentation of about 20 minutes each. When appropriate, participants will be given the opportunity to work with the developed computer aids. Furthermore, ample time will be reserved for discussion after each lecture.

The symposium will be organized and chaired by Dr. Martin Fischer from the Munich University Hospital, Germany. Dr. Fischer is an educational expert and collaborated in several projects with a focus on the development of computer-supported case-based learning in medicine.

We are looking forward to meeting you at this important Physiology teaching event in the year 2007, organized at the Joint Meeting of the Slovak Physiological Society, the Physiological Society and FEPS.

Prof Luc Snoeckx, chairman of the FEPS Task Force on Physiology Teaching.

For more information regarding the symposium you can contact:

Dr. Luc Snoeckx [L.Snoeckx@fys.unimaas.nl], or/and

Dr. Martin Fischer [Fischer.Martin@med.uni-muenchen.de]

European Young Physiologists Symposium (EYPS)

Bratislava, September 11, 2007

The EYPS of this year will be held in Bratislava, September 11, 2007, one day before the main joint meeting of the Slovak Physiology, the Physiological Society and the Federation of European Physiological Societies.

We cordially invite all European Young Physiologists (< 35 years) to participate in this event. Don't miss the opportunity to meet the future of European Physiology.

This program is already getting shape. We are glad to announce the two EYPS keynote lectures of this symposium :

- Dr. Marc Tjwa (Leuven, Belgium) on "Role of the urokinase receptor uPAR and plasmin in bone marrow stem cell retention and mobilization".
- Dr. Helen Graham (Manchester, UK) on "Probing the structural and mechanical properties of cardiac titin by Atomic Force Microscopy".

The scientific program consists of oral and poster presentations selected from abstracts submitted by young scientists.

The science will be concluded with a social meeting providing the opportunity to meet your colleagues in an informal environment.

For more information, visit the website of the meeting : <http://www.joint.conference.sav.sk> or address the local organizer Jan Bakos : ueenjbks@savba.sk

For FEPS travel fellowships see <http://www.joint.conference.sav.sk> and link up to Registration/FEPS travel fellowships.

Application for a travelling fellowship to the Joint Meeting of the Slovak Physiological Society, the Physiological Society (UK and Eire) and the Federation of the European Physiological Societies (FEPS)

Bratislava, September 11-14, 2007

The FEPS Executive Board has made available 10,000 euros to provide 20 - 30 travelling fellowships, for the Joint Meeting in Bratislava 2007.

Applicants should be **under 35 years of age** and the application should be submitted to the Secretary General of FEPS (FEPS-secretariat@fys.unimaas.nl)

The application shall include:

- A 1-page *curriculum vitae* including information about date of birth, nationality, education and scientific career. The CV should be accompanied with a list of publications of the applicant in international journals.
- An abstract for the meeting. The abstract form of the Joint meeting should be used (see homepage: <http://www.joint.conference.sav.sk/dev/>).

The deadline for the application for the travel fellowship is May 15, 2007

Applicants will be informed (by e-mail) of the decision **on June 1, 2007, two weeks before the abstract submission dead line of the Joint meeting (June 15, 2007).**

Applications will be scrutinised by members of Executive Board of FEPS and their decision is final.

FEPS Keynote lecture by Torben Clausen

"THE Na,K-PUMP IN SKELETAL MUSCLE, PHYSIOLOGICAL AND CLINICAL SIGNIFICANCE"

Institute of Physiology & Biophysics, University of Aarhus, DK-8000 Århus C., Denmark, tc@fi.au.dk

The Na⁺,K⁺-ATPase situated in the plasma membrane mediates active extrusion of Na⁺ and intracellular accumulation of K⁺. This transport system - the Na⁺,K⁺-pump - is the major regulator of the transmembrane distribution of Na⁺ and K⁺ (1) and is itself subject to regulation by a wide variety of factors in skeletal muscles (2).

The excitation of skeletal muscles is elicited by a rapid influx of Na⁺, followed by an equivalent efflux of K⁺ across sarcolemmal and t-tubular membranes. Due to their size and sudden onset, these events constitute the major transport challenge for the Na⁺,K⁺-pumps. Skeletal muscles contain the largest single pool of K⁺ in the organism. During intense exercise, the Na⁺,K⁺-pumps cannot readily reaccumulate the K⁺ into the muscle cells. Therefore, the working muscles undergo a net loss of K⁺, causing up to a doubling of the K⁺ concentration in the arterial blood plasma in less than one min and even larger increases in the interstitial K⁺. This may induce depolarisation, loss of excitability and force, in particular in muscles, where the excitation-induced passive Na⁺,K⁺-fluxes are large. Thus, excitation is a self-limiting process, that depends on the leak/pump ratio for Na⁺ and K⁺. Fortunately, excitation increases the Na⁺,K⁺-pumping rate within seconds. Thus, maximum activation of up to 20-fold above the resting transport rate may be reached in 10 s, with utilization of all available Na⁺,K⁺-pumps (2). In muscles, where excitability is reduced by preexposure to high [K⁺]_o, low [Na⁺]_o, depolarizing agents or even mechanical damage, acute activation of the Na⁺,K⁺-pumps by hormones restores excitability and contractility. In working muscles, the Na⁺,K⁺-pumps, due to rapid activation of their large transport capacity play a dynamic regulatory role in the from second to second ongoing restoration and maintenance of excitability and force. The Na⁺,K⁺-pumps are a limiting factor for contractile force and endurance. This is in particular noted if their capacity is reduced due to inactivity or disease. For these reasons, tight regulation of the Na⁺,K⁺-pumps is crucial for the maintenance of plasma K⁺, membrane potential and excitability in skeletal muscle. This is achieved in two ways:

- 1) By acute activation of the Na⁺,K⁺-pumps elicited by excitation, catecholamines, insulin, IGF-I, calcitonins and amylin.
- 2) By long-term regulation of the content of Na⁺,K⁺-pumps exerted by thyroid hormones, adrenal steroids, insulin, training, inactivity, fasting, K⁺-deficiency or K⁺-overload.

The Na⁺,K⁺-pump is a central target for regulation of Na⁺,K⁺-distribution, important for the pathophysiology of several diseases and for therapeutic intervention (3).

References:

- 1) JC Skou. Enzymatic basis for active transport of Na⁺ and K⁺ across cell membrane. *Physiol Rev*, 45: 596-617, 1965.
- 2) T Clausen. Na⁺-K⁺ pump regulation and skeletal muscle contractility. *Physiol Rev* 83: 1269-1324, 2003.
- 3) T Clausen. Clinical and therapeutic significance of the Na⁺,K⁺ pump. *Clin Sci* 95: 3-17, 1998.

Brief curriculum vitae

Torben Clausen, University of Aarhus, DK-8000 Århus C. e-mail: tc@fi.au.dk

1964-1979 assistant and associate professor, 1979-2007 professor of human physiology at the department of physiology, University of Aarhus. 1967-68 and 1975 fellowships at the University of Geneva, Switzerland.

Served terms on the editorial boards of *Cell Calcium*, *Physiol. Reviews*, *Acta Physiol. Scand.* and as advisory editor for *J. Gen. Physiol.* 1989-99 member of the Scientific and Prize Committees of the NOVO Nordic Foundation. 1996 chairman of the Korning Foundation grant committee. Member of the medical faculty committee for research and thesis evaluation

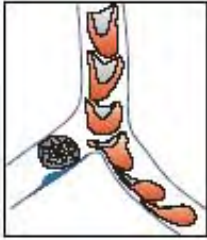
(Un.of Aarhus) and the Danish MRC Investigatory Committee for Scientific Dishonesty.

Major interests of research: Regulation of cation transport in intact muscle and its role in muscle function and integrity.

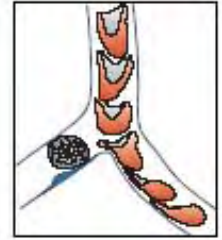
The detection of cation transport anomalies in human subjects and their importance for muscle fatigue and performance.

The
GESELLSCHAFT FÜR MIKROZIRKULATION UND VASKULÄRE BIOLOGIE e.V.

(German Society for Microcirculation and Vascular Biology)
 invites applications and nominations for the



**Hermann-Rein-Award for outstanding achievements
 in the area of clinical or experimental research
 in microcirculation and vascular biology**



sponsored by  **Deutschland GmbH**

The prize amounting to EUR 2,000 is awarded on occasion of the next annual meeting of the German Society for Microcirculation and Vascular Biology, October 4-6, 2007, in Heidelberg. The awardee will present the Hermann-Rein-Lecture during the meeting.

Personal applications as well as other suggestions are invited.

Applications should preferably be made by e-mail.

For personal applications, please provide:

- A PDF-file of a peer-reviewed paper (published or accepted for publication) with the applicant being the only or first author (agreement of co-authors is needed)
- Should an extraordinary study have been performed by two authors equally responsible, a joint application is possible
- Published articles should not be older than 2 years upon application
- Curriculum vitae, research fields, reference list (PDF-file)

In case of suggestion which should include author and publication, the according application material will be solicited from the candidate by the prize committee.

The awardee will be announced, if possible, in the following :

- Homepage and sendings of the German Society for Microcirculation and Vascular Biology
- Homepage and sendings of the European Society for Microcirculation and other scientific societies
- Deutsches Ärzteblatt as well as other suited journals (e.g. Journal of Vascular Research, etc.)

Applications to / Further information : Prof. Dr. A.R. Pries, Charité-Universitätsmedizin Berlin, Campus Benjamin Franklin, Dept. Of Physiology, Arnimallee 22, 14195 Berlin, Tel. (+49-30) 84 45-16 32 or -16 31 (secr.), Fax (+49-30) 84 45-16 34; e-mail: gfmmail@charite.de

Deadline for applications: June 15, 2007

Job Market : new on the FEPS homepage

Since April 2007 FEPS offers you the opportunity to announce available positions in your lab or institution on the website of FEPS (<http://www.FEPS.org>).

The text should not exceed 300 words.

Send the text of your announcement to Sonia Froidmont (FEPS-secretariat@fys.unimaas.nl).

The announcement will be posted free of charge. Note that after 4 weeks the announcement will be automatically removed.



List of contents of Acta Physiologica March 2007, Volume 189 Issue 3 page 219-301

EDITOR'S CHOICE

Thyroid hormone at physiological doses restores depressed contractile reserve and impaired calcium handling of cardiac myocytes from chronically unloaded hearts 219
Constantinos Pantos

Endurance training is associated with reduced expression of the mRNA of the subunits of Na⁺,K⁺-ATPase but elevated muscle Na⁺,K⁺-ATPase content and maximal activity 219
Yuk-Chow Ng

CARDIOVASCULAR

Depressed contractile reserve and impaired calcium handling of cardiac myocytes from chronically unloaded hearts are ameliorated with the administration of physiological treatment dose of T3 in rats 221
Y. Minatoya, K. to, Y. Kagaya, Y. Asaumi, M. Takeda, M. Nakayama, J. Takahashi, A. Iguchi, K. Shirato and H. Shimokawa

ENDOCRINOLOGY AND METABOLISM

Characterization of GLUT4 and calpain expression in healthy human skeletal muscle during fasting and refeeding 233
L. Norton, T. Parr, R.G. Bardsley, H. Ye and K. Tsintzas

GASTRO-INTESTINAL

Rat salivary gland ligation causes reversible secretory hypofunction 241
G.H. Carpenter, S.M. Osailan, P. Correia, K.P. Paterson and G.B. Proctor

Role of cholinergic-activated K_{Ca}1.1 (BK), K_{Ca}3.1 (SK4) and K_v7.1 (KCNQ1) channels in mouse colonic Cl⁻ secretion 251
J.E. Matos, M. Sausbier, G. Beranek, U. Sausbier, P. Ruth and J. Leipziger

MUSCLE

Effects of endurance training status and sex differences on Na⁺,K⁺-pump mRNA expression, content and maximal activity in human skeletal muscle 259
K.T. Murphy, R.J. Aughey, A.C. Petersen, S.A. Clark, C. Goodman, J.A. Hawley, D. Cameron-Smith, R.J. Snow and M.J. McKenna

Dantrolene, like fatigue, has a length-dependent effect on submaximal force-length relationships of rat gastrocnemius muscle 271
M.B. MacNaughton, J.J. Campbell and B.R. MacIntosh

NERVOUS SYSTEM

Effects of 20-day bed rest with and without strength training on postural sway during quiet standing 279
M. Kouzaki, K. Masani, H. Akima, H. Shirasawa, H. Fukuoka, H. Kanehisa and T. Fukunaga

RENAL

Hydronephrosis causes salt-sensitive hypertension and impaired renal concentrating ability in mice 293
M. Carlström, J. Sällström, O. Skøtt, E. Larsson, N. Wåhlin and A.E.G. Persson



List of contents of Acta Physiologica
April 2007, Volume 189 Issue 4 page 303-385
April 2007, Volume 189 Issue s654 page 1-35

EDITOR'S CHOICE

- Cortical and spinal adaptations induced by balance training: correlation between stance stability and corticospinal activation** 303
Andrew Cresswell

- The kidney really does tell the brain what to do!** 303
Edward J. Johns

REVIEW

- Evidence of pulmonary oedema triggered by exercise in healthy humans and detected with various imaging techniques** 305
G.S. Zavorsky

ENDICRONOLOGY AND METABOLISM

- Pancreatic islet blood flow during euglycaemic, hyperinsulinaemic clamp in anaesthetized rats** 319
L. Jansson, A. Andersson, B. Bodin and Ö. Källskog

GASTRO-INTESTINAL

- Modulation of mucosal permeability by vasoactive intestinal peptide or lidocaine affects the adjustment of luminal hypotonicity in rat duodenum** 325
O. Nylander and M. Sjöblom

MUSCLE

- Relationship between stimulation train characteristics and dynamic human skeletal muscle performance** 337
R. Maladen, R. Perumal, A.S. Wesler and S.A. Binder-Macleod

NERVOUS SYSTEM

- Cortical and spinal adaptations induced by balance training: correlation between stance stability and corticospinal activation** 347
W. Taube, M. Gruber, S. Beck, M. Faist, A. Gollhofer and M. Schubert

RENAL

- Vacuolar H⁺-ATPase expression is increased in acid-secreting intercalated cells in kidneys of rats with hypercalcaemia-induced alkalosis** 359
W. Wang, J. Praetorius, C. Li, H.A. Praetorius, T.-H. Kwon, J. Frøkiær and S. Nielsen

Upregulation of the brain renin-angiotensin system in rats with chronic renal failure

- M. Nishimura, H. Takahashi and M. Yoshimura* 369

RESPIRATORY

- Effect of the oestral cycle on respiratory mechanics in the rat** 379
A. Rubini and M. Bondi

ERRATUM

385

Studies of the organization of the human nociceptive withdrawal reflex. Focus on sensory convergence and stimulation site dependency

O.K. Andersen

1