

NEWSLETTER

Autumn 2015

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Postdoctoral fellowship position

Department of Ethology, Eötvös Loránd University (Budapest, Hungary)



A postdoctoral fellowship position is available in the Department of Ethology at Eötvös Loránd University, Budapest, Hungary to study the neural correlates of emotion processing in dogs and humans, with specific emphases in the application of novel research methods like non-invasive, awake fMRI and EEG measurements in dogs.

The Post-Doctoral position requires a Ph.D. degree (or absolutarium) – preferably in neuroscience; a high level of skill in technologies to be used for the project (EEG and/or MRI), and excellent English skills, both verbal and written.

The fellowship position is a limited-term appointment; it will be available for three years, from 1st January 2016, until 31st December 2018, and will be funded by an OTKA research grant (payment is based on Hungarian research fellow salary). Interested applicants may send their curriculum vitae and their 5 most important publications to Márta Gácsi at:

marta.gacsi@gmail.com

Conference report

Images of the Mind: Frontiers in Brain Imaging (Milan, Italy)

In April, I had the opportunity to attend a workshop focused on brain imaging methodology in Milan, organized by the University of Bicocca and the Milan Center for Neuroimaging (NeuroMI). As the title implies, the event was focused on functional MRI, with occasional diversions to other modalities. The talks were all very inspiring, not only presenting sound methods, but also demonstrating the general mindset and attitude of a good researcher. On the first of the two days of the workshop Russel Poldrack directly addressed the latter aspect with his talk about reproducibility and open science, supported by talks on topics like power analysis and the problem of multiple testing. Several talks on this day focused on how the 'Big Data' approach is taking shape in the field of neuroscience - the presenters told us about several online databases, diverse meta-analytic and large-scale data integration methods. One flagship of these projects is the ambitious Human Brain project, which Richard Frackowiak outlined to us, focusing the sub-project he leads, the Medical Informatics Platform.

On the second day, Nikos Logothetis presented his intriguing results with combining invasive electrophysiological methods with fMRI, relating local neural events to the global state of the brain in a unique way. James Haxby revealed how making participants watch the entire Indiana Jones movie in the scanner can be used to achieve between-subjects brain coregistration of functional, representational spaces. I found the talk of Christian Beckmann particularly interesting, who presented novel signal processing approaches to mine multiple continuous connectivity patterns from resting state fMRI data. The workshop concluded with the mind-boggling talk of Karl Friston, who expressed his gratitude to the organizers for putting together this great event, which, I am sure, just echoed the thoughts of all the participants.

Balázs Knakker

Research Centre for Natural Sciences
Hungarian Academy of Sciences



Upcoming conferences



Dubrovnik Conference on Cognitive Science: Comparative Cognition from Ethology to Cognitive Science

28 April - 1 May 2016, Dubrovnik, Croatia

Abstract submission deadline: 20th December 2015

6th Budapest CEU Conference on Cognitive Development

7-9 January 2016, Budapest, Hungary

Registration is now open!

International Brain Research Organization Conference

21-22 January 2016, Budapest, Hungary

Abstract submission deadline: 15th December 2015

International Workshop on Reading and Developmental Dyslexia

5-7 May 2016, Bilbao, Spain

Abstract submission deadline (Part 1): 20th January 2016

European Group on Child Language Disorders (EUCLDIS) workshop

11-13 May 2016, Budapest, Hungary

Further information will be available soon!

Cognitive and Neural Mechanisms of Human Memory

17-20 May 2016, Cluj-Napoca, Romania

Abstract submission deadline: 15th January 2016

Measuring Behaviour

25-27 May 2016, Dublin, Ireland

Registration is now open!

Fifth Implicit Learning Seminar

23-25 June 2016, Lancaster, UK

Abstract submission deadline: 1st March 2016

3rd International Conference of the European Society for Cognitive and Affective Neuroscience

23-26 June 2016, Porto, Portugal

Abstract submission deadline: 18th December 2015

24th Biennial Meeting of the International Society for the Study of Behavioural Development

10-14 July 2016, Vilnius, Lithuania

Early registration deadline: 1st February 2016

8th European Conference on Behavioural Biology

12-15 July 2016, Vienna, Austria

Abstract submission deadline: 1st March 2016

6th International Conference on Memory

17-22 July 2016, Budapest, Hungary

Abstract submission deadline: 31st January 2016

Psychology of Mathematics Education (PME) Annual Conference

3-7 August 2016, Szeged, Hungary

Registration will open shortly!

Workshop on Conceptual Spaces at Work

25-27 August 2016, Huddinge, Sweden

Abstract submission deadline: 13rd December 2015

European Conference on Visual Perception

28 August - 1 September 2016, Barcelona, Spain

Symposium submission deadline: 20th December 2015

The 46th European Association of Behavioural and Cognitive Therapies Congress

31 August - 3 September 2016, Stockholm, Sweden

Abstract submission deadline: 28th April 2016

European Conference on Cognitive Ergonomics

6-8 September 2016, Nottingham, UK

Abstract submission deadline: 15th February 2016

Introducing research institutes in East-Central Europe

Psychophysiology and Chronobiology Research Group

Institute of Behavioural Sciences,
Semmelweis University, Budapest, Hungary

Semmelweis University's Psychophysiology and Chronobiology Research Group (within the Institute of Behavioural Sciences) is focused on the research of sleep-waking state-specific neural oscillatory and cognitive-affective phenomena with a specific emphasis on sleep-related markers of individual psychophysiological characteristics. Maturational and age-related changes in sleep, as well as their functional relevance are investigated in both typically and atypically developing subjects. The research group has worked extensively with sleep microstructure and macrostructure alike. Facilities include a sleep and psychophysiological research laboratory, as well as ambulatory polysomnography equipment. A strong emphasis is put on quantitative EEG analysis and especially sleep spindle detection using the group's own in-house Individual Adjustment Method (IAM) of sleep spindle detection based on individually determined, adaptive criteria.

Core members and PhD students of the group are specialized in psychology, biology, computer programming and medicine. Former undergraduate and graduate students of the Psychophysiology and Chronobiology Research Group are found in Cambridge, Oxford and the Karolinska Institute. The Max Planck Institute of Psychiatry (Munich), the Donders Institute (Nijmegen), the Sleep Disorders Center of the University of Parma, the Department of General Psychology of the Pázmány Péter Catholic University and the Department of Ethology of the Eötvös University Budapest are among the long-term collaborators of the Psychophysiology and Chronobiology Research Group.



The issue of individual differences in sleep and sleep-related neural activity is one of the main focuses of the group. Using the adaptive IAM sleep spindle detection method, the group revealed a strong sexual dimorphism in the much-discussed relationship between trait cognitive ability and sleep spindle activity. Other recent achievements include the deliberate analysis of the polysomnographic, neural oscillatory and neurocognitive characteristics of nightmare disorder subjects, the depiction of the sleep phenotype of Williams syndrome, as well as the descriptive analysis of the ontogeny of dreaming.

The Psychophysiology and Chronobiology Research Group was involved in organizing the 5th DUCOG Conference on Sleep, neural oscillations and cognition. The group is actually working on the initialization of a biennial conference on sleep spindling (The 1st International Conference on Sleep Spindling will take place in Budapest: www.sleepspindles.com).

Péter Ujma (pre-doctoral fellow) &
Róbert Bódizs (senior research fellow)
Semmelweis University
Budapest, Hungary

For more details about the research group, see [this site](#)

Recent publications of the group include:

- Ujma PP, Konrad BN, Genzel L, Bleifuss A, Simor P, Pótári A, Körmendi J, Gombos F, Steiger A, Bódizs R, Dresler M. Sleep spindles and intelligence: evidence for a sexual dimorphism. *J Neurosci.* 2014 Dec 3;34(49):16358-68. doi: 10.1523/JNEUROSCI.1857-14.2014.
- Sándor P, Szakadát S, Bódizs R. Ontogeny of dreaming: a review of empirical studies. *Sleep Med Rev.* 2014 Oct;18(5):435-49. doi: 10.1016/j.smrv.2014.02.001
- Bódizs R, Gombos F, Ujma PP, Kovács I. Sleep spindling and fluid intelligence across adolescent development: sex matters. *Front Hum Neurosci.* 2014 Nov 28;8:952. doi: 10.3389/fnhum.2014.00952.
- Simor P, Körmendi J, Horváth K, Gombos F, Ujma PP, Bódizs R. Electroencephalographic and autonomic alterations in subjects with frequent nightmares during pre-and post-REM periods. *Brain Cogn.* 2014 Nov;91:62-70. doi: 10.1016/j.bandc.2014.08.004
- Bódizs R, Gombos F, Gerván P, Szócs K, Réthelyi JM, Kovács I. Aging and sleep in Williams syndrome: accelerated sleep deterioration and decelerated slow wave sleep decrement. *Res Dev Disabil.* 2014 Dec;35(12):3226-35. doi: 10.1016/j.ridd.2014.07.056

About CECOG: The Central European Cognitive Science Association (CECOG) is a civil association promoting cooperation in the field of cognitive science in Central Europe. The association was initiated at a meeting in August 2008 by the Budapest University of Technology and Economics and the University of Zagreb. The CECOG organizing committee: Melita Kovacevic, Ilona Kovács, and Csaba Pléh; president: Csaba Pléh; managing organizers and local hosts of the DuCog series: Nevena Padovan and Paula Fischer; managing secretary of the association: Paula Fischer.

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Previous newsletters are available at our [website](#)