CALL FOR APPLICATIONS

Neo-PRISM-C project

NEurodevelopmental **O**ptimal-**P**redictors, **R**isk factors, and **I**ntervention from a **S**ystems approach to **M**aladjustment in **C**hildren

Early Stage Researcher (ESR) positions

The Brain Imaging Center at the Research Centre for Natural Sciences of the Hungarian Academy of Sciences (RCNS HAS) is offering:

▪ Positions for **2 Early Stage Researchers** (ESRs; doctoral students) in a project aiming to study neurodevelopmental disorders (NDD). The purpose of the *Neo-PRISM-C* ETN is three-fold. First, it seeks to train Early Stage Researchers (ESRs) in applying the Research Domain Criteria, a novel framework for understanding psychopathology, to the study of the mechanisms and treatments of NDD. Second, it aims to train ESRs from multiple disciplines (psychology, neuroscience, data science) in state-of-the-art and transferable skills for innovating the study of brain-behavior relationships in NDD, in the context of a systems-based, trans-diagnostic theoretical frame. Finally, this ETN will also support training in designing evidence-based, individualized treatments of learning, behavioral, and social maladjustment, bridging across diagnostic categories. Towards these goals, we have assembled a trans-sectoral European network with expertise in cognitive, social, educational, clinical, and emotion research to provide training ESRs.

▪ Applicants from <u>all relevant academic disciplines</u> are encouraged to apply, including psychology, neuroscience, biology, linguistics, data science, and related disciplines. The selected doctoral students will enroll in the Multilingualism Doctoral School of the University of Pannonia and work towards their **Ph.D. in Linguistics**. The doctoral program focuses on multilingualism, which is one of the recently developed research areas in the highest demand, integrating humanities, social studies and natural sciences.

The multidisciplinary ***Neo-PRISM-C*** project is funded by the Horizon 2020 Marie Skłodowska-Curie action of the European Union. It is part of the Innovative Training Network (ITN) actions (http://www.neoprismc.org/).

Hosting Institution

Brain Imaging Centre (BIC)

These exciting and challenging positions are offered at BIC (http://www.ttk.mta.hu/akk/en/), an independent unit of the Research Centre for Natural Sciences of the Hungarian Academy of Sciences (RCNS HAS) since 2014. For the realization of the current research and development programs, the most up-to-date methods and equipment are available. At BIC, we conduct applied and basic research that promotes scientific progress and can be utilized directly and indirectly in the practice. The mission of BIC researchers is to attain a better understanding of human brain function, and apply this knowledge in training, innovation and contribution to mental health care.

Research Centre for Natural Sciences of the Hungarian Academy of Sciences (RCNS HAS)

The Research Centre for Natural Sciences, Hungarian Academy of Sciences (RCNS; Hungarian short name: MTA TTK) is an independent legal entity in the organizational framework of the Hungarian Academy of Sciences (HAS) (http://www.ttk.mta.hu/en/). It was established in 2012 in the frame of the reorganisation of the institutional system of the Hungarian Academy of Sciences. Focus areas of research in a transdisciplinary environment provided by RCNS have created optimal conditions for research carried out multidisciplinary research activities in natural sciences, particularly in the fields of health science, enzymology, molecular pharmacology, organic chemistry, cognitive neuroscience and psychology, as well as materials- and environmental chemistry.
RCNS HAS is one of the largest research organizations within the network of Hungarian Academy of Science. The new, state of the art building of the Research Centre which provides internationally acknowledged research environment for all RCNS institutes at the same location has been inaugurated on 15th November 2013.
The aim of RCNS HAS is to achieve internationally recognised, significant scientific results; to maintain cooperation with universities and research institutions from Hungary and other countries, as well as with economic and social stakeholders. Our staff is traditionally active in the field of education and scientific training, thus RCNS' priorities also include taking responsibility for the training of high-level future researchers / scientists.

LIVING IN BUDAPEST, HUNGARY

RCNS HAS is located in Budapest, the capital and the most populous city of Hungary, and the tenth-largest city in the European Union by population within city limits. Budapest is an Alpha-global city with strengths in commerce, finance, media, art, fashion, research, technology, education, and entertainment. It is Hungary's financial centre, and there are over 40 colleges and universities located in Budapest. Budapest is cited as one of the most beautiful cities in Europe, ranked as "the world's second best city", and "Europe's 7th most idyllic place to live". Tourism information about Budapest and Hungary can be found at https://hellohungary.com/en/.

Individual Research Projects

A description of all relevant information about **ESRs' individual research projects** (project title, host institution, supervisors, link, specific requirements and expected results) is followed:
Fellow: Neuro-*ESR9*

Project Title: The common core of reading and spelling: Behavioural and brain correlates and the development of educational intervention of spelling disorders (WP 2 utilizing gained knowledge for WP3).
Host Institution: RCNS HAS
Supervisors: Valéria Csépe, Zoltán Vidnyánszky (RCNS-HAS)
Link for more information: http://www.ttk.mta.hu/akk/en/. See the Brain Structure and Dynamics Research Group lead by Prof. Zoltán Vidnyánszky and the Research Group of Neurocognitive Development lead by Dr. Ferenc Honbolygó.

Specific Requirements
ESR9 will examine atypical visual processing at the behavioral (eye-tracking) and neural level (EEG) as the common core for reading and spelling difficulties.

Expected results
1) To shed light on the neuronal background of atypical representation of spelling, a less studied aspect of reading disability.
(2) To reveal novel information on the common core of reading and spelling problems. Data collected in experimental paradigms using brain measures and eye-tracking will reveal both visual and language- specific aspects of reading and spelling.
(3) To develop an educational intervention for improving spelling in poor readers.

Fellow: Neuro-*ESR10*
Project Title: Neurocognitive profiling and remediation of reading disorder: investigating the effects of musical training on ERP and behavioral measures of speech perception (WP2).
Host Institution: RCNS HAS
Supervisors: Ferenc Honbolygó (RCNS HAS), Maja Kelic (SUVAG)
Link for more information: http://www.ttk.mta.hu/akk/en/. See the Brain Structure and Dynamics Research Group lead by Prof. Zoltán Vidnyánszky and the Research Group of Neurocognitive Development lead by Dr. Ferenc Honbolygó.

Specific Requirements
ESR10 will study the effects of music training on the neurocognitive basis of reading difficulties, developing behavioral and neurocognitive (ERP) methods to assess intervention effects.

Expected results
(1) To learn about the effectiveness of music and rhythm training programs as a pleasurable form of auditory training, which might improve the processing of segmental and suprasegmental features of speech.
(2) To examine the generalization of music training effects onto the actual reading performance. The expected output is extensive knowledge of the cognitive and neural background of dyslexia as well as a new form of RD remediation.
Eligibility criteria

Successful applicants should:
(a) Must **not** have resided or carried out their main activity (work, studies, etc.) in the country of their host organisation **for more than 12 months** in the 3 years immediately prior to the contract commencement date; and
(b) Have a proven knowledge of **at least one of the three themes** of the *Neo-PRISM-C* (as described in the first paragraph of this announcement) network, as judged based on

outstanding results within a diversified career path, publication activity, and teaching, supervision, teamwork, knowledge transfer, and management.

(c) For entry into the Ph.D. program, a Masters degree **from an accredited University are required.**

Women and men from all countries are encouraged to apply. The recruitment milestone for all ESRs is estimated <u>at the 6th month from the ETN start</u>.

Offer Requirements

Qualifications

1. A Master's degree in psychology, neuroscience, biology, linguistics, data science, and related disciplines.
2. Excellent written and spoken English skills (applicants are required to provide relevant proof).
3. Knowledge of, or willingness to learn Hungarian will be considered as an advantage.
4. A keen interest in neuroscience and specifically in neurodevelopmental disorders.
5. Knowledge on computer proficiency in standard softwares of Social Sciences and mathematics (e.g., SPSS, R, MATLAB) is highly desirable.
6. Knowledge and prior involvement in experiments using brain imaging methods (e.g., EEG, MRI, fMRI, fNIRS, MEG), data collection, analysis, and interpretation will be considered as an advantage.
7. Knowledge and prior involvement in experiments using psychophysiological and neurophysiological experimental techniques (e.g., eye-tracking) will also be considered as an advantage.
8. Sufficient breadth or depth of specialist knowledge in the discipline and research methods and techniques.
9. Strong organizational and planning skills and ability to take initiatives.
10. Demonstrated experience with experimental research and an ability to work with international research teams whose work focuses on children from special and vulnerable populations will be considered an advantage.

Additional information

Overall, *Neo-PRISM-C* will offer the ESRs:

▪   Project-specific research in neurodevelopmental disorders
▪   Full-time employment for 3 years with a competitive salary and additional resources to take part in international conferences and collaborations
▪   Tuition for doctoral studies at the University of Pannonia
▪   A PhD-title after 4 years of research
▪   Secondments to partner organizations
▪   Participation in workshops and courses /training on scientific and entrepreneurial skills, as well as excellent supervision
▪   Competitive salaries and additional resources to take part in international conferences and collaborations
▪   Membership of world-renowned labs, as part of a motivated interdisciplinary team

Benefits

Post Financial Terms

The post for the ESR is **a full-time** and fixed term for one year with a possible renewal for another two years, with an expected start date September 2, 2019. Salary will be €30.372 per year, including comprehensive health insurance and social security plans. Salary will be supplemented with Mobility Allowance (€600 per month). Qualified applicants based on family status may receive an additional Family Allowance of €500 per month. All salaries are taxable according to the Hungarian Tax Law.

How to apply

Candidates are asked to submit the required documents in a single .pdf file via email to Dr. Ferenc Honbolygó at honbolygo.ferenc@ttk.mta.hu until April 30, 2019, 14:30 EET:

- Letter of motivation (research interests, research career goals, skills, experience, reasons for applying to the program and the specific host organization)
- A full updated CV (including among other information, personal details with complete contact data, work, and education history, etc.)
- Certified copies of relevant degrees and English Language proof of proficiency
- The names and e-mail addresses of two referees

For more information, please contact Dr. Ferenc Honbolygó, at the Brain Imaging Centre, Research Centre for Natural Sciences, Hungarian Academy of Sciences (1117 Budapest, Magyar tudósok krt. 2, Hungary). Email: honbolygo.ferenc@ttk.mta.hu.

Deadline for the first round of applications is **April 30, 2019.**