



Call for applications

ChildBrain-project
Advancing brain research in children's
developmental neurocognitive disorders

Early stage researcher positions



Positions for 15 early stage researchers (doctoral students) are offered in a project aiming to develop and apply new brain research methods to study normal and atypical cognitive development of children. Applicants from all relevant academic disciplines are encouraged to apply, including biology, cognitive neuroscience, computer science, educational sciences, engineering, linguistics, medicine, mathematics, psychology, physics, statistics, and related disciplines. The selected doctoral students will enroll in the graduate school of the host institution and work towards their PhD.

The multidisciplinary **ChildBrain** (Advancing brain research in children's developmental neurocognitive disorders) 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.

The positions are open at five top ranked academic institutions and three innovative companies in the following PhD projects under three broader themes (see project descriptions at www.childbrain.eu):

Neurocognitive disorders

- Development of reading processes in typical and dyslexic individuals in conventional and digital media (University of Jyväskylä, Prof. Paavo Leppänen)
- Brain connectivity studies in young children at risk for dyslexia using diffusion tensor imaging (DTI) and auditory steady state responses (ASSR/EEG) (KU Leuven, Prof. Pol Ghesquière)
- Distractibility in healthy children and ADHD (Radboud University, Donders Institute, Prof. Ole Jensen)
- Distinguishing developmental delay from developmental deviancy based on cortical oscillatory EEG/MEG activity (Aston University, Prof. Joel Talcott)
- Maturation of brain activity in cochlear implant children (KU Leuven, Prof. Jan Wouters)

Brain Development

- Brain connectivity studies in typically- and atypically-developing young children using MEG and combined EEG/MEG resting-state and diffusion-tensor imaging (Aston University, Dr. Caroline Witton)
- Brain mechanisms of sensory learning during typical development (University of Jyväskylä, Dr. Jarmo Hämäläinen)
- Signatures of functional brain maturation (University of Jyväskylä, Dr. Tiina Parviainen)
- Measures of auditory steady state brain responses in young children (KU Leuven, Prof. Jan Wouters)

Brain research methods

- Developing automatic segmentation algorithms for MRIs of children (BESA GmbH, Dr. Isabella Paul-Jordanov & University of Münster, Dr. Carsten Wolters)
- Structural connectivity analysis algorithms for young children's brains (KU Leuven, Dr. Maaïke Vandermosten & ICOMetrix, Dr. Dirk Smeets)
- Conduction model parameter estimation from EEG and MEG data (Radboud University, Donders Institute, Dr. Robert Oostenveld)
- Development of new finite element approaches for child brain research and comparison to standard forward modelling methods for EEG and MEG source analysis (University of Münster, Dr. Carsten Wolters)
- Development of Bayesian inversion techniques for multimodal source analysis for child brain research (University of Münster, Dr. Carsten Wolters)
- Tools for clinical MEG investigations in children (Radboud University, Donders Institute, Dr. Robert Oostenveld & Elekta Oy, Dr. Lauri Parkkonen)

The academic and private sector partners will offer the students project-specific research, scientific collaboration, secondments, workshops and courses on scientific and entrepreneurial skills, as well as excellent supervision. Salaries are competitive (please see details under specific ESR projects).

Successful applicants should have a degree that allows a direct entry into doctoral studies and less than 4 years of experience in research; and not have lived more than 12 months during the last 3 years in the country where doctoral studies are started; this is due to emphasis on mobility in the ITN projects.

Women and men from all countries are encouraged to apply.

How to apply

Please send to those research sites you would like to do your PhD studies (see www.childbrain.eu)

- CV (personal details with full contact information, work and education history etc.)
- Names and e-mail addresses of referees
- Certified copies of relevant diplomas
- Proof of proficiency in English
- Letter of motivation (research interests, reasons for applying to the programme and to the specific host organizations)

Deadline for the first round of applications is **April 30th 2015** (June 30th 2015 for ESR projects 2, 5, 9 and 11).