

Structure report

Chair in Cognitive Neuropsychology & Biopsychology

(Hoogleraar Cognitieve Neuropsychologie & Biopsychologie)

Position: Full professor, or tenure track to full professorship

Size: 1.0 FTE

Date: 3 -2-2012

Background

The Faculty of Psychology & Neuroscience wishes to install a chair in Cognitive Neuropsychology & Biopsychology at the department of Neuropsychology and Psychopharmacology (NP&PP). Since February 2009, the chair in “Neuropsychology and Biopsychology” has been vacant. Given recent trends in this field and the acquired profile of the department and faculty, a committee was appointed to define the general profile of this position (as described in this document). Members of this committee are:

- Professor Jan Ramaekers (chair), chairman Department NP&PP
- Professor Bernadette Jansma, dean Faculty of Psychology & Neuroscience
- Petra Hurks PhD, assistant professor and chair section Neuropsychology of NP&PP
- Caroline van Heugten PhD, associate professor Neuropsychology
- Arjan Blokland PhD, associate professor Neuropsychology
- Martin van Boxtel MD PhD, associate professor Neuropsychology
- Arie van der Lugt PhD, faculty board member responsible for education

Department of Neuropsychology & Psychopharmacology

The department of Neuropsychology and Psychopharmacology (NP&PP) consists of two sections: i.e., Neuropsychology and Psychopharmacology. Both research and education in these sections are dedicated to the scientific investigation of brain-behaviour relationships within a life span perspective and applying these connections to psychological issues. The section Neuropsychology focuses on both basic research (i.e., systematic experimental, cognitive, and behavioural investigations) and applied/clinical research, in order (A) to understand how the structure and function of the brain relate to specific psychological functions (and variability in these functions) and (B) to improve the effectiveness, range, and depth of clinical practice. Psychopharmacology assesses biological mechanisms that underlie cognitive, affective and behavioural functions by means of controlled pharmacological interventions.

The department NP&PP was established in 2007, as an offspring from the former department Neurocognition. The department has now two professors: a chair in Behavioural Toxicology of Medicine and Drugs (professor J. Ramaekers) and a chair in Experimental

Psychopharmacology (professor W. Riedel). In October 2010, the section Neuropsychology consisted of one associate professor, four assistant professors, one lecturer, one postdoc, and four PhD students. Currently, the section has an international outlook, with staff from e.g., the Netherlands, Belgium, Greece, Portugal, and Italy and international collaborations with researchers from e.g., within the EU, America, and Australia (for examples, see section International collaborations). The section Psychopharmacology consists of two professors, two associate professors, three assistant professors, four postdocs, and eight PhD students.

Research

The field of neuropsychology is changing rapidly as technology brings about new tools for study and research. There are more avenues for discovery of new knowledge in this field than ever before. The section Neuropsychology of the Department NP&PP has (i) the disposal of a wide range of these state-of-the art technologies and (ii) performs fundamental and applied research on brain-cognition relationships in a developmental perspective. It explicitly aims to contribute to the understanding of (ab)normal human cognitive processes and representations. Cognition is defined broadly to include the domains of attention, planning, language, reasoning, human learning, action and intelligence. Much of the research in the section Neuropsychology bridges across these various fields. Also, researchers in the section Neuropsychology are specifically interested in unravelling the *biological* (e.g., genetics, prefrontal control), *neuropsychological* mediators/moderators (e.g., mood dysfunction, behavioural problems, and compensation strategies) and *psychosocial* factors that determine these processes and/or relationships across a lifespan. For these purposes, a broad range of (state of the art) research methods is used, including longitudinal, interventional, experimental, psychophysiological, and neuroimaging techniques. Examples of recent publications from the section Neuropsychology are:

- Guerreiro, M.J.S., Murphy, D.R., & Van Gerven, P.W.M. (2010). The role of sensory modality in age-related distraction: A critical Review and a renewed view. *Psychological Bulletin*, 136 (6), 975-1022.
- Keulers, E.H.H., Stiers, P., & Jolles, J. (2010) Developmental changes between 13-21 years in the extent and magnitude of the BOLD response during decision making. *NeuroImage*, in press.
- Dibbets, P., Evers, L., Hurks, P., Bakker, K., & Jolles, J. (2010). Differential brain activation patterns in adult attention-deficit hyperactivity disorder (ADHD) associated with task switching *Neuropsychology*, 24 (4), 413-423.

Local collaborations within Maastricht University: The section Neuropsychology is embedded in one of the most successful faculties of psychology in the Netherlands, both in terms of education and research. It has a structural relation with researchers from other departments within the faculty of Psychology and Neuroscience as well as within the Faculty of Health, Medicine, and Life Sciences (i.e., Department of Psychiatry and Neuropsychology) of Maastricht University. Also, all researchers in the section are embedded in the KNAW-

accredited research school EURON (chaired by FHML). These collaborations have enabled an efficient research management and exchange of staff, PhD students, technicians, equipment, and imaging facilities as well as knowledge between both faculties and departments.

(Inter-)national collaborations: The section Neuropsychology has a tradition of (inter)national collaborations with esteemed people and institutes in the field of (neuro)psychological research, education and health care. Examples of these *institutes* are universities, science centers, schools, PABO's, and clinical institutes, such as Youth Health Care of the Municipal Health Center and the Academic Hospital Maastricht (Maastricht UMC+). Examples of *national scientific consortia* that members of the section Neuropsychology participate in are: NWO/FES consortium "Cognitive rehabilitation"; ZonMw/VSB consortium "Restore4stroke"; PROO consortium "Fostering self-monitoring and self-regulation in primary and secondary education"; NWO/FES consortium "Brain and Cognition: Societal innovation in health care, education, and social safety", focus area "The learning child"; and the consortium, financed by the Platform Beta Technique, called "Curious Minds (Talentenkracht)", which is an innovative interface between scientific disciplines and children's development. Examples of *international scientific consortia*, that members of the section Neuropsychology participate in, are: the World Federation of Neurological Rehabilitation, special interest Group Neuropsychological Rehabilitation, with members from e.g., UK, Netherlands and Australia, and the consortium "Integration of EEG and fMRI data in the study of cognitive processes and disorders", financed by the Interdisciplinary Research Grant, K.U.L. Research Fund (Belgium).

The successful candidate will be responsible for creating and strengthening an active research environment of the section Neuropsychology at a high international level as well as for obtaining prestigious (inter)national research grants. Next to supporting the established, ongoing research lines, the candidate is explicitly invited to extend his or her own research interests.

Education

The sections collaborate in many fields of education. Apart from participation in the Bachelor programme of the faculty, NP&PP has a core position in three master's programmes, being the one year Neuropsychology Master track, and in two specialisation tracks in the two year Research Master in Cognitive and Clinical Neuroscience (the Neuropsychology and the Fundamental Neuroscience tracks) to which members of both sections equally contribute. In addition, research projects often integrate expertise from both sections in order to achieve maximal research quality. Staff members of NP&PP also participate in the European Graduate School of Neuroscience (EURON) to stimulate interfaculty research and education.

The candidate will be responsible for implementing and maintaining high standards of neuropsychological education in the Bachelor Psychology, with an annual enrolment of 400 (inter-)national students, and the master and research master programs in Neuropsychology, with an annual enrolment of 60-80 (inter-)national majors.

Management

The candidate will chair the section Neuropsychology (Dept Neuropsychology & Psychopharmacology) and supervise neuropsychological research lines. The candidate will also be responsible for managing interdepartmental relations with related research and educational institutes at Maastricht University.

Positioning of the chair Cognitive Neuropsychology & Biopsychology

The chair Cognitive Neuropsychology & Biopsychology has a focus on the normal neuropsychological development and ageing, and to cognitive and behavioural problems in a life span perspective (e.g., ADHD and dementia). The two chairs in Psychopharmacology are aiming respectively to: 1) discover the neurochemical underpinning and correlates of normal and abnormal behaviour and to use these in the context of drug development and biomarker development (Experimental Psychopharmacology); and 2) to brain-behaviour interactions in relation to medication and drugs use (Behavioural Toxicology of Medicine and Drugs).

The faculty intends to establish in future years a chair in Developmental Cognitive Neuroscience; this chair will be devoted to understanding what neural and cognitive changes are underlying the infant, childhood and adolescent development of higher-order executive control functions (especially memory, attention and motor-processes), and lower-level perceptual processing. Also, the Faculties of Health, Medicine & Life Sciences/Psychology and Neuroscience of Maastricht University are considering a special chair in Clinical Neuropsychology. In general, Clinical neuropsychology focuses on psychologists' work in healthcare settings, assessing and treating patients in cases of e.g., head injury, stroke, or other neurological disorders. It should be noted that some overlap does exist between the chairs in Developmental Cognitive Neuroscience, Clinical Neuropsychology and Cognitive Neuropsychology/Biopsychology as each specialty area complements and adds to the knowledge of the other areas. E.g., theories and models in cognitive neuropsychology however might be applied in clinical populations

Qualifications

- PhD in experimental psychology, cognitive neuroscience, neuropsychology, or a related field is required;
- Excellent reputation in the above research field as demonstrated by list of publications;
- History of successful grant applications;
- Experience with (co) promoting PhD research projects;
- Experience with management in academia;

- Large national and international network;
- Experience with teaching and coordinating courses in neuropsychology and/or cognitive neuroscience.