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PhD in Medical Sciences
2014-2015

INVITATION to the Public defence of

Jeroen VAN SCHEPENDOM

To obtain the joint academic degree of **'DOCTOR IN MEDICAL SCIENCES' (VUB)**
'DOCTEUR EN SCIENCES PSYCHOLOGIQUES' (UMONS)

Cognitive impairment in Multiple Sclerosis
Statistical and neurophysiological aspects

Tuesday 5 May 2015
Auditorium **P. Brouwer**, 17:00
Faculty of Medicine and Pharmacy, Laarbeeklaan 103, 1090 Brussel

How to reach the campus Jette:
http://www.vub.ac.be/english/infoabout/campuses

Vrije Universiteit Brussel

Summary of the dissertation

In this thesis, conducted jointly at the Vrije Universiteit Brussel (VUB) and l'Université de Mons (UMONS) under an FWO doctoral fellowship (aspirant mandaat), we have examined cognitive impairment and deterioration in multiple sclerosis (MS).

MS is the most commonly encountered neurodegenerative disease in young adults, affecting 1 out of 1000 and leading to both physical and cognitive impairment.

In this thesis, we have analysed data collected at the neuropsychological department at the National MS Center Melsbroek and have answered the following neuropsychological questions:
1. Can we discern a pattern of cognitive decline in MS ?
2. How well does the Symbol Digit Modalities Test predict general cognitive impairment?
3. What is the relative importance of cognitive and physical impairment to a patient's self-perceived quality of life ?

Furthermore, we have assessed the value of EEG P300 data in detecting cognitive impairment. Being able to assess cognitive functioning without the patient performing a complex task (like neuropsychological tests) would eliminate practice effects and allow a more objective assessment of cognitive impairment. For this part, we calculated brain networks based on EEG data and calculated several network parameters.

Curriculum Vitae

Jeroen Van Schependom was born in Sint-Niklaas on December 11, 1988. After studying Greek-Mathematics at the Sint-Jozef-Klein-Seminarie, he started studying Engineering at Ghent University. He finished the Master of Science in Engineering Physics in 2011 with highest distinction.

During his studies, he learnt Spanish whilst on Erasmus to the Universidad Complutense de Madrid, he attended the "7th International Esarda course: Nuclear Safeguards and Non-proliferation'' at the Joint Research Center Ispra (Italy) and he took extra courses on Group theory and NMR.

In 2011, he started working on his PhD at the Université de Mons (UMons) under supervision of Prof. Dr. Guy Nagels and Prof. Dr. Marie-Claire Haelewyck. After obtaining an FWO aspirant mandate, the PhD was transferred to the Vrije Universiteit Brussel (VUB) and a joint-PhD agreement was signed. With the additional supervision of prof. Jacques De Keyser and prof. Marie B D'hooghe and in close collaboration with the National MS Center Melsbroek, he arrived at the PhD presented today.