Hanse-Wissenschaftskolleg
Institute for Advanced Study

Program

Workshop

Gait & EEG

Delmenhorst, November 18 – 19, 2019

ORGANISATION:
Prof. Dr. Stefan Debener, Carl von Ossietzky University of Oldenburg
Nadine Jacobsen, Carl von Ossietzky University of Oldenburg
Joanna Scanlon, Carl von Ossietzky University of Oldenburg

Venue:

Hanse-Wissenschaftskolleg
Institute for Advanced Study
Lemkuhlenbusch 4
27753 Delmenhorst
Germany
www.h-w-k.de

Monday, November 18, 2019

09:00 – 09:15	**Welcome and organization**
09:15 – 10:00	**Gait disorders in Parkinson's disease** Prof. Dr. Karsten Witt, Chair of Neurology, Carl von Ossietzky University of Oldenburg, Germany
10:00 – 10:45	**Effects of auditory information on gait rehabilitation and Parkinson's therapy** Prof. Dr. Alfred Effenberg, Dept. Of Sports Science, Leibnitz University Hannover, Germany
10:45 – 11:00	*COFFEE BREAK*
11:00 – 11:45	**Application of a perturbation-treadmill in assessment and training in geriatric patients** Prof. Dr. Tanja Zieschang, Chair of Geriatrics, Carl von Ossietzky University of Oldenburg, Germany
11:45 – 12:30	**Non-traditional gait analysis with applications in geriatrics** Dr. Nils Eckardt, Institute of Sport Science, Carl von Ossietzky University of Oldenburg, Germany
12:30 – 14:00	*LUNCH*
14:00 – 14:45	**Ecological Validity oft he N170 – a mobile EEG study** Prof. Dr. Peter König, Institute of Cognitive Sciences, University of Osnabrück, Germany
14:45 – 15:30	**Electrocortial dynamics of gait** Prof. Dan Ferris, Dept. Of Biomedical Engineering, University of Florida, USA
15:30 – 16:00	*COFFEE BREAK*

16:00 – 16:45	**Functional brain imaging during gait** Dr. Martin Seeber, Basic Neuroscience, University of Geneva, Switzerland
16:45 – 17:30	**Combination of IMUs and ambient sensors for gait analysis** Sandra Hellmers, Dept. of Computing Science, Carl von Ossietzky University of Oldenburg, Germany
17:30 – 19:00	**Posters, Wine & Cheese**
19:00	*JOINT DINNER*

Tuesday, November 19, 2019

09:00 –10:45	**Hands-on sessions***
10:45 – 11:00	*COFFEE BREAK*
11:00 –12:30	**Hands-on sessions***
12:30 – 14:00	*LUNCH*
14:00 –15:30	**Hands-on sessions***
15:30 – 16:00	*COFFEE BREAK*
16:00 – 16:45	**Presentation of results from the hands-on sessions**
16:45 – 17:30	**Closing remarks**

*** Hands-on Sessions**

Hands-on sessions will be distributed over the second day and will partially take place in parallel. However, it is still possible to participate in several hands-on sessions. The necessary hardware will be provided, but participants can also use their own computer.

- **Measuring with GaitRite - The gold standard for gait analysis**
  (Dr. Sebastian Fudickar and Sandra Hellmers, Oldenburg)
  In this hands-on session, we will introduce you to conducting measurements, post-processing and analysis with the GaitRite, representing the gold standard for gait analysis.

- **Qualisys Gait Analysis - application in clinical and research context**
  (Dr. Nils Eckardt, Oldenburg)
  Marker based motion analysis is still the gold standard in clinical gait analysis. In this hands-on-session we get to know a typical workflow, from the exact placement of the markers and the subsequent data acquisition and analysis, to individual marker-arrangements and the integration of external equipment.

- **The APDM Mobility Lab Analysis System**
  (Dr. Lars Schwickert, Stuttgart)
  The field of inertial-sensor based motion analysis is quickly evolving. This session will present diverse applications of the APDM multi sensor system outside the lab. All participants will be actively involved into assessments of gait and balance as well as a showcase and discussion of clinical interpretation.

- **Acquiring EEG data during walking**
  (Neuropsychology Lab, Oldenburg)
  This hands-on session will use different EEG and/or motion sensors to acquire EEG during gait and/or gait initiation. Data will be made available to participants for further processing.

- **Analyzing gait EEG signals**
  (Dr. Martin Seeber, Geneva)
  This hands-on session will focus on the analysis of EEG recorded during gait. We will discuss and apply artifact identification and reduction, how to synchronize and link behavioral gait information to EEG recordings and the basics of functional brain imaging during gait based on time-frequency analyses.