

2 PhD Positions within the Austrian-French collaboration project **SMILES**  
“Effects of sleep on motor sequence learning by motor imagery in young and older adults”

University of Salzburg, Department of Psychology, Centre for Cognitive Neuroscience, Laboratory for Sleep and Consciousness Research - **Assoc. Prof. Dr. Kerstin Hoedlmoser**

University Claude Bernard Lyon 1, Department of Sports, Inter-university Laboratory of Human Movement Biology (LIBM) - **Assoc. Prof. Dr. Arnaud Saimpont**

The overall aim of this position is to work within the Austrian-French collaboration project **SMILES** funded by the national science funds of Austria (FWF) and France (ANR), for the next three years.

**PhD-Project description:**

Motor sequence learning requires repeated practice, which may be exhausting for older adults, especially during rehabilitation. Among less physically demanding interventions to preserve/enhance motor functions in elderly people, motor imagery (MI) training has gained attention. However, we do not know whether MI training might benefit from sleep in older adults, as shown in young adults. This project will focus on four research questions: (1) Do the effects of sleep versus wakefulness on consolidation after MI training differ between fine and gross motor tasks and age groups? (2) How does EEG activity (mu rhythm; 7-13Hz) during MI of these two tasks differ from rest, and does it change after learning in the two populations? (3) How is EEG activity (sleep spindle, slow wave activity) during sleep associated with the consolidation process of the two tasks and in the two age groups?

We offer two 3-year PhD positions (one funded by the FWF located in Austria and one funded by the ANR located in France) for two bright, motivated and energetic students with a master's degree. Earliest start date March 2023; latest October 2023. Both students will be supervised by Assoc. Prof. Dr. Kerstin Hoedlmoser (University of Salzburg, Austria) and Assoc. Prof. Dr. Arnaud Saimpont (University of Lyon, France). One student will be located in Salzburg, the other in Lyon.

**Qualifications requested:**

- Master's degree in cognitive (neuro-)science, psychology, biology, medicine/neurology, computational neuroscience, sports science or related fields
- Of advantage will be research skills in EEG, polysomnography and/or motor imagination and motor learning
- Of further advantage are statistical and IT skills as well as programming experience
- Strong communication and organizational skills
- Independent working style
- English proficiency is indispensable
- Flexible/distributed working hours (sleep recordings!)

The programme strives for equal representation of female PhD students, wherefore women are especially encouraged to apply.

**Deadline for applications: 1st February 2023**

To apply, please send a motivation letter, CV, publication list, name of 1-2 reference persons (all in English) to the institution where you would be interested to do your PhD:

[kerstin.hoedlmoser@plus.ac.at](mailto:kerstin.hoedlmoser@plus.ac.at) (University of Salzburg, Austria)

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