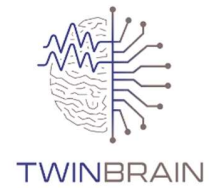


# TwinBrain Summer school 2.0

## Neuroscience of Movement: Exploring Brain Dynamics in Parkinson's Disease and Related Disorders



### Key information:

**When?** 5 - 9 July 2022

**Where?** Piran, Slovenia / Online

**Who?** Students (Masters and PhD), and post docs from the field of kinesiology and movement science, physiotherapy, psychology, cognitive (neuro)science, biomedical engineering and related disciplines.

**What?** Summer school to bridge the disciplines for a comprehensive understanding of brain complexity in health and disease



**Pre-requirements?** Registration (free), motivation letter for on-site students (limited up to 20) <sup>1</sup>

**Website:** [www.twinbrain.si](http://www.twinbrain.si)

**Registration form (deadline 25 May 2022):** <https://forms.gle/iFi3q9GBXi1DrT8g7>

### Summer school overview:

Is it time to start bridging the fields in a multidisciplinary fashion to create new approaches for comprehensive assessment of complex brain dynamics in everyday situations? Can this offer further insights into preventive and rehabilitative approaches? These questions and many more will be addressed in the TwinBrain summer school 2.0 with international speakers from Slovenia, Germany, Switzerland, Italy, France, Belgium, Czech Republic, Bosnia and Herzegovina, and USA.

In our daily lives, we do many things automatically. And although we often seem to react without the slightest mental effort, there are a multitude of complex processes going on in our brains. We do not

<sup>1</sup> The registration for on-site participation is limited to 20 students (send motivational letter) and 100 online students

*The current schedule is tentative, and the final schedule is subject to change.*



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realize how difficult the task is until we (re)learn a particular cognitive-motor task, such as keeping our balance on skis or while surfing or even grasping a spoon after a stroke. On the other hand, we know of several neurodegenerative diseases that are progressive and prevent the smooth performance of everyday tasks. James Parkinson already recognized that progressive Parkinson's disease (PD) is associated with debilitating features of postural instability and gait difficulties (PIGD) such as falls and freezing of gait. PD initially causes physical symptoms. Later, problems with cognitive function, including forgetfulness and difficulty concentrating, may occur. As the disease worsens over time, many people develop dementia. In the current summer school, we will have an international team of experts covering the latest discoveries to the topics and offering an insight into how brain imaging technology might contribute to understanding brain function and disease development. Recent advancements in wireless and wearable technologies allow us to take a step further into real life. Therefore, the latest developments in the Mobile Brain/Body Imaging (MoBI) approach will be presented.

Students (mainly PhD students and post-docs) will have the unique opportunity to attend a 5-day summer school with five different but interconnected modules. Moreover, the networking opportunities and the informal part will certainly open new avenues for future research in the field of neuroscience of movement. The brain is indeed an amazing organ, the most complex according to itself (YourBrain et al., 2022).

#### **Summer school modules:**

Module 1: Mobile Brain/Body Imaging (MoBI) – linking human behavior with brain responses

Module 2: Multisensory integration and attention in aging and disease

Module 3: Biomarkers of cognitive decline and dementia

Module 4: Bio- and neurofeedback technologies in training and rehabilitation

Module 5: Exercise and the brain

#### **Summer school speakers:**

Bart Roelands (Belgium)

Kevin De Pauw (Belgium)

Duško Lepir (Bosnia and Herzegovina)

Darko Katović (Croatia)

Reza Abdollahipour (Czechia)

Florian Giesche (Germany)

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Klaus Gramann (Germany)

Julian Rudisch (Germany)

Robert Stojan (Germany)

Claudia Voelcker-Rehage (Germany)

Valentina Bianco (Italy)

Paolo Manganotti (Italy)

Jurij Dreo (Malta)

Uroš Marušič (Slovenia)

Christoph Michel (Switzerland)

Bruno Giordani (USA)

Voyko Kavcic (USA)

Jeannette R Mahoney (USA)

*More information on the speakers' resumes and lecture titles will follow shortly.*

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