

# Summer School of Brain Mapping and Stimulation Techniques

Blended Intensive Program in the framework of NeurotechEU

9<sup>th</sup> – 13<sup>th</sup> of September 2024

The [“Iuliu Hațieganu” University of Medicine and Pharmacy Cluj-Napoca](#) is pleased to announce the **Erasmus+ BIP Mobility opportunity “Summer School of Brain Mapping and Stimulation Techniques”** which will take place between **9<sup>th</sup> – 13<sup>th</sup> of September 2024** in Cluj-Napoca, Romania.

The blended intensive program will commence with a two-day virtual component, taking part the week before, that serves as an introduction to the subsequent in-person sessions. This online segment is designed to familiarize participants with the core concepts and the wide-ranging realm of brain technologies, including electroencephalography (EEG) and quantitative EEG (QEEG) fundamentals, eye tracking and brain stimulation techniques.

QEEG uses algorithms to transform brain waves into numerical data, which can be analyzed to gain insight into signal complexity, brain connectivity, and neural networks. The method has numerous clinical applications, including the study of neuropsychiatric disorders, epilepsy, stroke, dementia, and traumatic brain injury. During the program, participants will become familiar with various QEEG analysis tools, such as Brain Vision Analyzer and Brainstorm – MATLAB, and engage in team-oriented activities that promote a multidisciplinary approach.

Eye tracking is a technique used to monitor and record the movements and positions of a person’s eyes, providing valuable insights into various aspects of human behavior, cognition, and visual perception. The course will offer an introductory overview of this method used in psychology, neuroscience, human-computer interaction, marketing research, usability testing and clinical assessment.

Additionally, transcranial magnetic stimulation (TMS) and transcranial direct current stimulation (tDCS) will be presented to the participants in workshops on neuromodulation.

Attendees will benefit from hands-on sessions where they can put theory into practice, utilizing state-of-the-art equipment and software to conduct brain mapping and stimulation under expert guidance.

The event aims not only to teach technical skills but also to foster a rich intercultural environment where participants from diverse backgrounds can share experiences and ideas.

In summary, SSBMS represents an opportunity for young neuroscientists, technologists and clinicians interested in exploring and gaining a foundational understanding of brain function and the transformative potential of neurotechnology within an enriching educational environment.

## Details

- **Dates:** 9<sup>th</sup> – 13<sup>th</sup> of September 2024 (in-person activities), 3<sup>rd</sup>-4<sup>th</sup> of September 2024 (virtual component)
- **Locations:** “Iuliu Hațieganu” University of Medicine and Pharmacy Cluj-Napoca and RoNeuro Institute for Neurological Research and Diagnostic Cluj-Napoca

- **Teaching Staff:** Prof. Dafin F. Mureșanu, Lecturer Livia Popa, Dr. Hanna Dragoș, Dr. Victor Dăbală, Dr. Irina Vlad, Dr. Emanuel Ștefănescu, Dr. Olivia Verișezan Roșu, Dr. Anca Grigore, Dr. Bianca Crecan Suciu
- **Main Language:** English
- **ECTS granted:** 3 ECTS
- **Available Places:** 20 (flexible based on demand)
- **Target Group:** students (Bachelor, Master and PhD level); enrolled in academic programs in the field of medicine, psychology, bioengineering, biotechnology or biological sciences
- **Degree of Difficulty:** basic-moderate
- **Each partner institution is in charge of its own selection process prior to nomination**
- **Nomination Deadline: August 2<sup>nd</sup> 2024 (extended deadline)**
- **Partners will send their nominations to Mrs. Adriana Roșu via e-mail: [arosu@umfcluj.ro](mailto:arosu@umfcluj.ro)**
- Nominated students will receive guidance on the following steps.
- All previously accepted students are requested to send their documents as soon as possible.

The preliminary program of the event is available here:

