



Seminar announcement

as part of the teachings BIOMEDICAL SIGNAL AND IMAGE PROCESSING and BIOIMAGING AND BRAIN RESEARCH,
within the Biomedical Engineering master's degree course

November 22nd, 2024; 11:30 - 13:30; ROOM 140/D5

INNOVATIONS AND INSIGHT IN SLEEP PHYSIOLOGY: ENGINEERING A BETTER SLEEP

**Prof. Luisa de Vivo, Prof. Michele Bellesi,
Dr. Eleonora Ficiarà, Dr. Daniele Marchei**

**BRAIN AND SLEEP RESEARCH LAB
UNIVERSITÀ DI CAMERINO**

Abstract

In this seminar we will explore the fundamental aspects of sleep physiology, focusing on global brain activity as observed through polysomnography. We will then introduce closed-loop acoustic stimulation—a technique designed to enhance NREM sleep—detailing its principles, application, and potential to augment sleep in both healthy individuals and those with focal epilepsy. The session will conclude with a look at the development of a device aimed at tracking sleepiness through measurements of pupil diameter.

Bio

Luisa de Vivo, Assistant Professor in Physiology at UNICAM, completed her PhD in Neuroscience in 2010, then held postdoctoral positions in Italy, U.S.A., and UK, later establishing her lab in Camerino with the Armenise-Harvard award. Michele Bellesi, an Associate Professor at UNICAM, studied at UNIVPM and joined the Center for Sleep and Consciousness in Wisconsin before working in UK. Dr. Eleonora Ficiarà and Daniele Marchei, postdocs at the Brain and Sleep Research Lab, focus on biomedical data analysis and computational modeling, including app development for dream tracking.

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