

MSCA PF HOSTING OFFER 2026 – ELTE Sleep, Dreams and Cognition RG

Name of the host institution	Eötvös Loránd University
Faculty	Faculty of Education and Psychology
Name of the supervisor	Peter Daniel Simor
Organisational Unit / Research Group	Institute of Psychology / Department of Affective Psychology / Sleep, dreams and cognition Research Group
Research Team	<p>Peter Simor (sleep, dreaming, mind wandering) Miha Likar (mind wandering) Vivien Tomacsek (sleep, nightmare disorder)</p>
Project experiences (EU / international)	<p>Projects in basic research in the domains of sleep, dreaming and cognition</p> <p>(NKFI, BIAL, FNRS, MTA)</p> <p>From sleep microstructure to subjective experience: Cortical networks, information-processing and dream experiences in light of psychophysiological investigations NKFI FK128100 (2018-2022)</p> <p>Dreams, memories and emotional functions in the sleeping brain – NKFI FK142945 (2022-2026)</p>
Research Interests	<p>The aim of our research group is to examine human behavior with a special focus on sleep and its role in information processing. In our view, sleep provides an exciting “natural environment” to explore and unravel the neural activity of the brain as well as its more specific functions or dysfunctions. Our research topics extend from basic neurophysiological studies to more complex experiments focusing also on the behavioral level. Our aim is to understand sleep and sleep-related cognitive and affective processes in their entirety integrating multiple (physiological, cognitive and phenomenological) levels of analyses.</p> <p>Our current projects cover three main areas of research:</p> <ul style="list-style-type: none"> • The neurophysiology of REM sleep • Lucid dreaming • The role of mind wandering in learning and cognition <p>Most relevant publications</p> <p>Simor, P., van der Wijk, G., Nobili, L., & Peigneux, P. (2020). The microstructure of REM sleep: Why phasic and tonic?. <i>Sleep medicine reviews</i>, 52, 101305.</p> <p>Simor, P., Vékony, T., Farkas, B. C., Szalárdy, O., Bogdány, T., Brezóczki, B., ... & Németh, D. (2025). Mind wandering during implicit learning is associated with increased periodic EEG activity and improved extraction of hidden probabilistic patterns. <i>Journal of Neuroscience</i>, 45(19).</p>

	Simor, P., Bogdány, T., & Peigneux, P. (2022). Predictive coding, multisensory integration, and attentional control: A multicomponent framework for lucid dreaming. Proceedings of the National Academy of Sciences, 119(44), e2123418119.
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