

243rd WPI-IIIS Seminar

Glow to Sleep: How Near-infrared Light Tricks Your Brain Into Rest

Adenosine signaling plays a central role in sleep regulation but has not been successfully developed as a therapeutic target. Near-infrared photobiomodulation (PBM) enhances mitochondrial activity to increase ATP synthesis and may increase extracellular adenosine, offering a novel approach to sleep modulation. In translational studies spanning mice and humans, PBM increased non-REM sleep, elevated adenosine levels, and enhanced mitochondrial cytochrome c oxidase activity in preclinical models, while also improving subjective and objective sleep parameters in individuals with subthreshold insomnia. These converging findings highlight PBM as a promising, non-pharmacological strategy for improving sleep and support further clinical exploration.



Dr. Tae Kim

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Date: **Thursday, December 18, 2025**

Time: **11:00 – 12:00**

Venue: **1F Auditorium, IIIS Building**

*** On-site participation only**



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