ORGANISMAL
PROTEOSTASIS
REGULATION
FOR 5762

SEMINAR SERIES **Mar 10, 2:00 pm**

Dr. Maria Ermolaeva

‘Contribution of sleep to proteostasis maintenance and the concept of sleep-mimetic drugs.’

Leibniz Institute on Aging – Fritz Lipmann Institute (FLI), Jena

Sleep deprivation and circadian disruption are well known to have detrimental effects on organismal health across species. Using a C. elegans model of aging-associated protein aggregation, we found that sleep disruption exacerbates systemic proteotoxicity, leading to accelerated deterioration of organ function. Subsequent multi-omics analyses in nematodes, human cells, and mouse brain revealed a conserved molecular mechanism linking sleep and the circadian clock to cellular health. Remarkably, this mechanism can be pharmacologically targeted to restore proteostasis and organ function even in permanently sleep- and clock-impaired nematodes, opening avenues for therapeutic strategies, e.g., the development of sleep-mimetic drugs. The presentation will discuss the underlying molecular pathways and the potential translational implications of these findings.

HOST
Amit Kumar Sahu
CECAD Research Center
University Hospital of Cologne

WHEN
Tuesday,
March 10, 2026
2:00 pm (CET)

WHERE
Lecture Hall (ground floor)
CECAD Research Center
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50931 Köln

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