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ΣΕΜΙΝΑΡΙΟ ΣΕΜΙΝΑΡΙΟ

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ΘΕΜΑ: **It's all about time! The critical role of circadian rhythms in regulating health, disease, and pharmacology**

ΗΜΕΡΟΜΗΝΙΑ: **Δευτέρα, 4 Σεπτεμβρίου 2023**

ΩΡΑ: **12:00**

ΤΟΠΟΣ: **Αμφιθέατρο Συνεδριακού ΙΤΕ/ΙΕΧΜΗ**

ΠΕΡΙΛΗΨΗ

Light and temperature constitute two major entrainers of the circadian timing system. Understanding how photic signals are transduced through the SCN and how core body temperature influences peripheral cells is critical for understanding the emergence of biological rhythms in the peripheral tissues. This work discusses mechanistic mathematical models that capture the essential hierarchical structure of the photic and temperature signal transduction through the SCN leading to rhythmic patterns of endocrine hormones (cortisol) and peripheral clock genes activation with profound downstream physiological and pharmacological effects. We analyze the implications of disrupted light signals in the form of (social) jetlag and shift work and the implications of alterations in core body temperature rhythms. Such model predictions would add insights toward understanding the organization of the central timing system and the



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health implications of disrupting and restoring circadian rhythms. Finally, we discuss how population studies examining human behavior can shed light on the role the disruption of circadian rhythms plays in the development of chronic disease.

Σύντομο βιογραφικό

Dr. Androulakis is a Biomedical Engineering, Chemical & Biochemical Engineering Professor at Rutgers University. He received his BS in Chemical Engineering from NTUA and his MS and Ph.D. from Purdue University. He was a research associate at Princeton University before joining ExxonMobil's Corporate Strategic Research Laboratories. In 2004 he moved back to academia. He is a fellow of the American Institute of Medical and Biological Engineering and a Fellow of the American Institute of Chemical Engineers. He currently chairs the Quantitative Systems Pharmacology Special Interest Group of the International Society of Pharmacometrics. He has published extensively in quantitative systems biology and quantitative systems pharmacology.