

RUSSELL FOSTER LIGHT, SLEEP AND CIRCADIAN RHYTHMS – BIOLOGY TO THERAPEUTICS

Wednesday, March 14th 2018, 17:00 at IMP Lecture Hall, 1030 Vienna
Vienna Doctoral School in Cognition, Behaviour and Neuroscience



RUSSELL FOSTER

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Light plays a critically important role in regulating circadian rhythms and sleep. This presentation will consider how light is detected by a recently discovered photoreceptor system within the eye and by what mechanisms this light information is transduced to regulate behavior. Finally, the discussion will address whether this mechanistic information can be used to develop new therapeutics to regulate sleep/wake timing in the profoundly blind.

Russell Foster is the Head of the Nuffield laboratory of ophthalmology, Director of the Sleep and Circadian Research Institute and a Fellow of Brasenose College Oxford. His research is focused upon how circadian rhythms and sleep are generated and regulated and what happens when these systems fail as a result of societal pressures or disease. A key finding was the discovery that the eye contains a previously unrecognised “3rd class of photoreceptor” based upon a small number of photosensitive retinal ganglion cells (pRGCs) that utilise the blue light sensitive photopigment melanopsin. His most recent work has dissected how the pRGCs regulate gene expression of the molecular clockwork, which has led to the identification of novel drug targets to regulate sleep/wake timing. Clinical trials will commence in 2018. Russell has also pioneered the mechanistic understanding of sleep and circadian rhythm disruption in neuropsychiatric disease. Working with psychiatrists, he is helping develop evidence-based approaches to stabilise sleep and reduce the severity of psychiatric illness. He is also leading studies on the nature of sleep disruption in teenagers and the development of sleep education for use in schools. Russell was elected to the Fellowship of the Royal Society in 2008 and the Academy of Medical Sciences in 2013. In 2015 he received the Order of Commander of the British Empire (CBE) for services to Science. He is currently a member of the Governing Council of the Royal Society and Chairs the Royal Society Public Engagement Committee. Russell is also a Trustee of the Science Museum. He has published over 240 peer reviewed publications and has received multiple national and international awards. Russell has co-written four popular science books and is currently working on his 5th.