



Join us for two invited talks on
the physics and physiology of light

10 August 2020, 1700 Swiss time
„Illuminating circadian circuits“
Tiffany Schmidt (Northwestern University)

24 August 2020, 1700 Swiss time
„How the Sun paints the Sky“
Robert Fosbury (European Southern Observatory/
University College London)

Twilight Talks

Interdisciplinary
webinar series

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„Illuminating circadian circuits“

Tiffany Schmidt (Northwestern University)

Proper function of the circadian system is crucial for our health and well-being. Photoentrainment of circadian rhythms is driven by light input from the melanopsin-expressing, intrinsically photosensitive retinal ganglion cells. Our lab has been working to uncover the synaptic and circuit mechanisms of development of function of ipRGC input to the circadian system. In this talk I will discuss a new inhibitory signaling pathway from the eye to the brain that dampens the sensitivity of our circadian system to light.



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Tiffany Schmidt

Tiffany Schmidt is an Assistant Professor in the Neurobiology Department at Northwestern University. She did her PhD work with Paulo Kofuji at the University of Minnesota, and worked as a post-doc in the lab of Dr. Samer Hattar at Johns Hopkins University until starting her own lab at Northwestern University in 2014. Dr. Schmidt's group works to map the circuits by which light influences behavior. Her

laboratory uses electrophysiology, optogenetics, and behavior in genetic mouse models to understand how the melanopsin-expressing, intrinsically photosensitive retinal ganglion cells influence diverse behaviors such as sleep, circadian photoentrainment, the pupillary light reflex, and visual perception.



24 August 2020, 1700 Swiss time

„How the Sun paints the Sky“

Robert Fosbury (European Southern Observatory/
University College London)

Unless they are astronauts, humans must view the Universe through the window of the Earth's atmosphere. Although a clear sky is relatively transparent to visible light, bright astronomical objects – most noticeably the Sun – can paint the entire sky with luminosity, colour and shadow to be captured by both landscape painters and photographers. How does this happen and what physical processes are responsible for these beautiful colours, gradations and patterns? The talk explains some of this and is illustrated with spectacular images of the sky from space and from above the European observatories in the Chilean Atacama desert. It concludes with some remarks about how we will characterise the atmospheres of Earth-like planets orbiting other stars.

**Robert (Bob)
Fosbury**

Robert (Bob) Fosbury is currently an emeritus astronomer at the European Southern Observatory and an honorary professor at the Institute of Ophthalmology at UCL. He worked for 26 years at the European Space Agency (ESA) as part of ESA's collaboration with NASA on the Hubble Space Telescope (HST) project based at the European Southern Observatory (ESO) near Munich in Germany. Fosbury joined this initiative in 1985, more than 5 years before launch. During the latter part of this period, Bob served on NASA's Ad Hoc Science Working Group and ESA's Study Science Team as they developed the instrument

concepts for the James Webb Space Telescope, the next-generation space observatory. He has worked on topics including solar-type stars, the environments of black holes in quasars and active galaxies, the nature of galaxies in the early Universe and, most recently, on ways of characterising the atmospheres of earth-like exoplanets. In retirement, he has turned to studies of animal, including human, vision by working with visual neuroscientist on the effects environmental light on animal systems.

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