

## Information about the facilities

The new Max Planck Research Facility for Sleep and Circadian Neuroscience, directed by Dr. Svenja Brodt and Prof. Dr. Manuel Spitschan, houses two dedicated sleep suites for in-patient testing of sleep and circadian physiology decoupled from external and environmental conditions. Featuring full light, sound, and temperature control, the facility allows for the implementation of cutting-edge experimental paradigms, including forced-desynchrony and constant routine protocol as well as other temporal-isolation protocols. The facility opens up the possibility to examine novel research questions, thereby advancing our understanding of the intricate relationships between circadian rhythms, sleep physiology, and environmental factors. By leveraging state-of-the-art technologies for precise manipulation of light exposure and other external cues, the facility enables researchers to explore the mechanisms underlying circadian misalignment, sleep disorders, and their broader impacts on health and cognition.

## Program

- 2 p. m. – 2:30 p. m.**      **Welcome & Introduction**  
Prof. Dr. Zhaoping Li  
Prof. Dr. Manuel Spitschan  
Dr. Svenja Brodt
- 2:30 p. m. – 3:30 p. m.**      **Chronobiology and its beginnings in Tübingen**  
**Prof. Dr. Charlotte Helfrich-Förster**  
University of Würzburg
- 3:30 p. m. – 4 p. m.**      **Networking Coffee**
- 4 p. m. – 4:30 p. m.**      **Guided Lab Visit**
- 4:30 p. m. – 5 p. m.**      **Memory processing during sleep in humans**  
**Dr. Monika Schönauer**  
University of Freiburg
- 5 p. m. – 5:30 p. m.**      **Making science matter: My journey in science communication and what makes it effective**  
**Dr. Christine Blume**  
University of Basel
- 5:30 p. m. – 6:30 p. m.**      **Networking Aperitif**

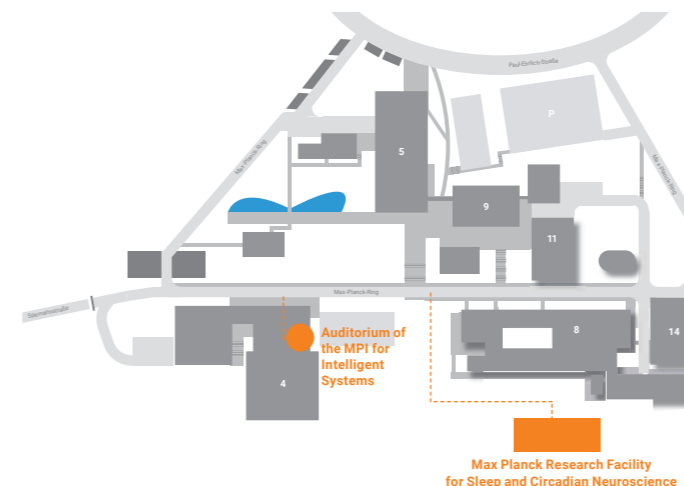
All talks will be held in the auditorium of the Max Planck Institute for Intelligent Systems

Registration and more information:

[www.kyb.tuebingen.mpg.de/sleep-and-circadian-neuroscience-symposium](http://www.kyb.tuebingen.mpg.de/sleep-and-circadian-neuroscience-symposium)

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## Campus plan & contact information



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MAX-PLANCK-INSTITUT  
FÜR BIOLOGISCHE KYBERNETIK



## PROGRAM INAUGURAL SYMPOSIUM

2 p. m. - 6.30 p. m.  
Friday, 8 November 2024

**Max Planck  
Research Facility for  
Sleep and Circadian  
Neuroscience**

## Inaugural Symposium for the new Max Planck Research Facility for Sleep and Circadian Neuroscience

We are pleased to introduce our newly built research facility, which is run in collaboration between the *Brain States for Plasticity* (PI: Dr. Svenja Brodt) and *Translational Sensory and Circadian Neuroscience* (PI: Prof. Dr. Manuel Spitschan) groups.

By providing state-of-the-art infrastructure for measuring hormonal and brain oscillatory fluctuations under controlled lighting and temperature conditions, the Max Planck Research Facility for Circadian and Sleep Neuroscience is set to host cutting-edge neuroscientific research. Combining the groups' expertise in methods from vision science and multimodal neuroimaging, we aim to significantly advance our understanding of how circadian rhythms and sleep influence physiological and psychological processes. The facility will serve as a local research hub, fostering interdisciplinary collaboration in basic and applied circadian and sleep research in the Tübingen area and beyond.

### SPEAKER

## Chronobiology and its beginnings in Tübingen

Chronobiology examines biological timing processes, including periodic phenomena that serve to adapt organisms to solar- and lunar-related rhythms. Modern chronobiology was co-founded in Tübingen by the plant physiologist Erwin Bünning (1906-1990) and continued by Wolfgang Engelmann (1934-2023) and Hans G. Erkert at the Botanical and Zoological Institutes in Tübingen. The best studied rhythms in chronobiology are the circadian rhythms that are regulated by circadian clocks and align physiological processes with the 24-hour environmental cycles. One of the most obvious rhythms controlled by the circadian system is the daily sleep-wake cycle. The importance of circadian clocks for organismal health is evidenced by the severe consequences associated with circadian disruption or misalignment, including increased risk of cancer, neurological diseases, metabolic disorders, and obesity. I will give a brief overview of the history of chronobiology in Tübingen and explain the influence of the circadian clock on the sleep-wake cycle and other physiological parameters.



**Prof.  
Dr. Charlotte Helfrich-  
Förster**

↘ *University of Würzburg*

### SPEAKER

## Memory processing during sleep in humans

Reactivation of waking neuronal activity during sleep holds a functional role in memory consolidation. In this talk, I will discuss the brain signatures of memory processing during sleep in humans and how offline memory processing affects behavior. Declarative memory consolidation is impaired after acoustic slow wave disruption. The detriment in both slow wave count and their traveling characteristics correlated with decreases in memory performance, indicating that orchestrated slow wave activity is involved in memory stabilization. Complementary to this finding, the content of memory reactivation can be decoded most accurately from sleeping electrical brain activity during periods with both high slow wave and spindle power. Together, this indicates that signature brain oscillations of NREM sleep are integral for successfully processing and storing newly learnt information during sleep.



**Dr. Monika Schönauer**

↘ *University of Freiburg*

### SPEAKER

## Making science matter: My journey in science communication and what makes it effective

In a world saturated with information, communicating science effectively is more crucial than ever. In this talk, I will share my personal journey into the field of science communication and why it has become my passion. I will discuss the strategies and principles that characterise my approach to communicating science and why I believe they are effective. Additionally, I will touch on the challenges communicators face in combating misinformation and fostering trust in science. By drawing from personal experiences and practical examples, this talk will offer insights into what makes science communication not only effective but also transformative in shaping public understanding and fostering informed decision-making.



**Dr. Christine Blume**

↘ *University of Basel*