

Einladung zum Vortrag  
im Rahmen des gemeinsamen Kolloquiums des Instituts für Biologie und  
Umweltwissenschaften und des Departments für Neurowissenschaften

## **Prof. Eric Warrant**

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### **Australian Bogong moths use a true stellar compass for long-distance navigation at night**

Each spring, billions of Bogong moths escape hot conditions in different regions of southeast Australia by migrating over 1000 km to a limited number of cool caves in the Australian Alps, historically used for aestivating over the summer. At the beginning of autumn the same individuals make a return migration to their breeding grounds to reproduce and die. To steer migration Bogong moths sense the Earth's magnetic field and correlate its directional information with visual cues. In this presentation, we will show that a critically important visual cue is the distribution of starlight within the austral night sky. By tethering spring and autumn migratory moths in a flight simulator, we found that under natural dorsally-projected night skies, and in a nulled magnetic field (disabling the magnetic sense), moths flew in their seasonally appropriate migratory directions, turning in the opposite direction when the night sky was rotated 180°. Visual interneurons in the moth's optic lobe and central brain responded vigorously to identical sky rotations. Migrating Bogong moths thus use the starry night sky as a true compass to distinguish geographic cardinal directions, the first invertebrate known to do so. These stellar cues are likely reinforced by the Earth's magnetic field to create a robust compass mechanism for long-distance nocturnal navigation.

**09.06.2020, 16 Uhr s.t.**

**virtual room: <https://zoom.us/j/99011268052>**

Gastgebend:

Prof. Dr. Henrik Mouritsen (AG Neurosensorik/Animal Navigation), IBU

Gäste aller Institute sind herzlich willkommen