



THE UNIVERSITY OF ARIZONA HEALTH SCIENCES

Center for Sleep, Circadian & Neuroscience Research



The Center for Sleep, Circadian and Neuroscience Research is a one-of-a-kind modern facility with a highly controlled environment aimed at enhancing the conduct of human research involving sleep and circadian rhythms. The center serves a broad research community at the University of Arizona with outreach and collaboration across major research centers in the United States with the goal of improving our understanding of disease processes involving multiple biological systems.

The Center has five distinct functional zones, community interface, sleep suites, testing rooms, laboratory support and administrative staff. The eight monitoring bedrooms are adjacent to a control room that allows the passage of intravenous lines for medications and hoses with gas mixtures via conduits in the separating walls. Such a design allows for the administration of medications or alteration of inhaled gases during sleep without disturbing the research participant by entering the monitoring bedroom. Respiratory assist devices such as CPAP units can be remotely controlled and monitored from the control room. Additionally, a two-way intercom allows for the technician in the control room to easily communicate with the research participant at any time.

The facility allows researchers to monitor and record sleep and behavior in a time synchronous manner with the sleep and circadian rhythms and environmental conditions using continuous audio/video recordings with color infrared capability. Continuous monitoring of the environment is possible using sensors for light, noise, temperature (room, core body and skin temperature) and inhaled gases. All measurements and interventions will be time stamped within the monitoring software.

The Center for Sleep, Circadian and Neuroscience Research is a world-class interdisciplinary research center designed to support collaborative and interdisciplinary sleep research studies.

- Eight sleep suites (bedrooms with bathrooms)
- Nine neurocognition rooms
- Two physical exam rooms
- Control room
- Wet research (BSL2) laboratory
- Conference room, reception area, offices
- Community engagement area
- Staff rooms, breakroom, and lockers

Sleep and circadian rhythm measurements will include:

- more than 22 simultaneous channel recordings of six electroencephalograms (EEG) channels
- two electro-oculography (EOG) channels
- two electrocardiogram (EKG) channels
- chin and leg electromyogram (EMG) channels
- pulse oximetry, thoracic and abdominal movement using respiratory inductance plethysmography
- airflow and other four respiratory measurements from continuous positive airway pressure (CPAP) device
- transcutaneous CO₂ and O₂ measurements
- other measurements from wearables and sensors dependent on individual experimental protocols

DIRECTOR

Sairam Parthasarathy, MD

ASSOCIATE DIRECTOR

Michael Grandner, PhD

OPERATIONS MANAGER

Christopher J. Morton

(520) 626-8457 | cjmorton@arizona.edu