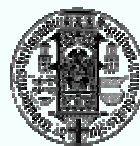
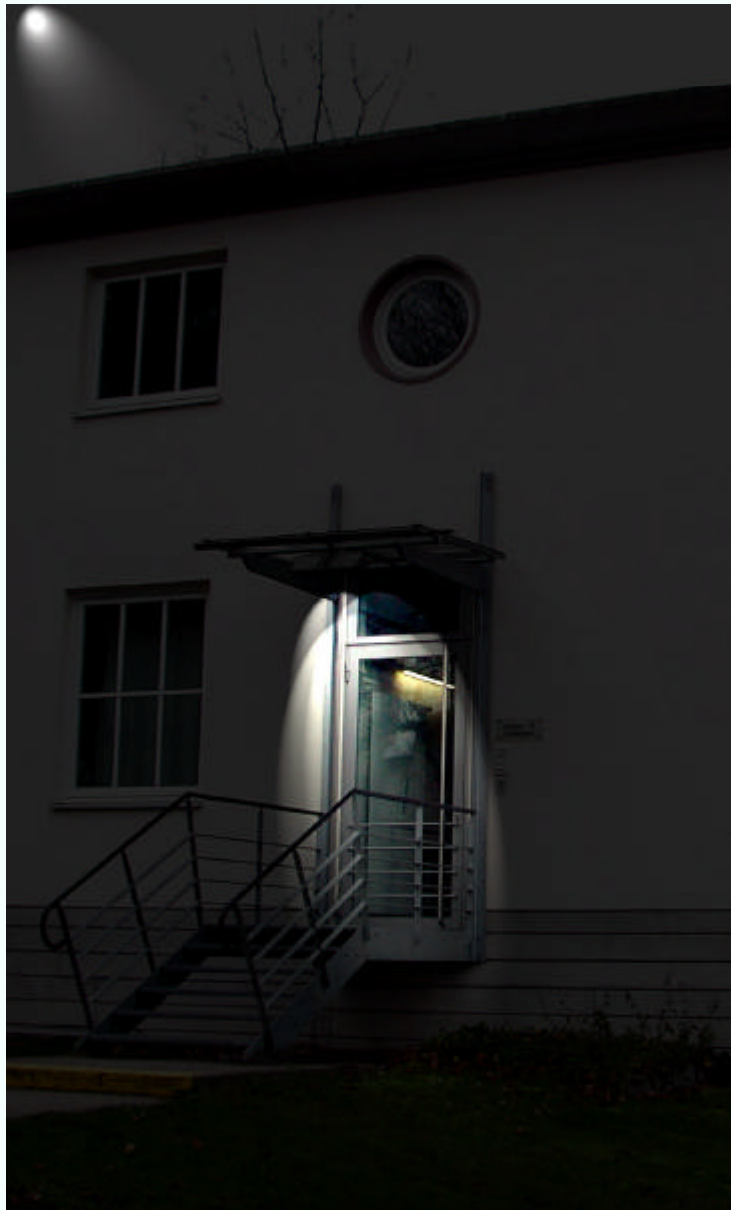


**CENTER FOR SLEEP RESEARCH AND SLEEP MEDICINE  
AT THE DEPARTMENT OF PSYCHIATRY AND PSYCHOTHERAPY  
OF THE  
UNIVERSITY HOSPITAL OF FREIBURG**



**UNIVERSITY**  
FREIBURG | **HOSPITAL**

Hauptstraße 5, 79104 Freiburg i./Br, Germany

## Center for Sleep Research & Sleep Medicine

The Department of Psychiatry and Psychotherapy of the University Hospital of Freiburg hosts a five bed facility for sleep research and sleep medicine. The facility has been accredited by the German Sleep Society (DGSM = Deutsche Gesellschaft für Schlafforschung und Schlafmedizin, [www.dgsm.de](http://www.dgsm.de)). The accreditation process included an onsite visitation by external reviewers judging structural aspects of the facility. Besides having undergone this review process the center for sleep research and sleep medicine has taken part successfully in several activities of the German Sleep Research Society concerning quality assurance. These included projects with respect to the process of diagnostic quality.



The facility was established by the director (Prof. Dr. M. Berger) in the Department of Psychiatry and Psychotherapy 1990. It is headed by Professor Riemann, the chief of the section of clinical psychology and psychophysiology/sleep medicine. Both Professor Riemann and Professor Berger are internationally renowned experts in the field of sleep research and sleep disorders medicine. A selected list of publications can be found in the appendix. Professor Riemann is a member of the German Sleep Society, the European Sleep Research Society and the American Sleep Research Society. Professor Riemann also presently belongs to the Executive Board of the German Sleep Society and is the head of the commission for scientific coordination and leads the task force on Insomnia. Furthermore, Professor Riemann is president of the next congress of the German Sleep Society which will take place in Freiburg in September 2004 ([www.dgsm-freiburg2004.de](http://www.dgsm-freiburg2004.de)) and which expects more than 1200 participants from German speaking countries.

### Description of the facility

The center for sleep medicine and its sleep laboratory is located in the Western wing of the Department of Psychiatry and Psychotherapy of the University Hospital which is situated in a picturesque area of Freiburg near the botanic gardens and the Institute of Biology. The center hosts five beds which are used for diagnostic and scientific purposes. The figure on the right shows one of the five rooms where sleep studies are performed. The next figure shows the electrode montage of a patient, who took part in a sleep study in the facility. Usually, for diagnostic purposes two consecutive nights of investigation are considered adequate.

Besides the electroencephalogram, the electrooculogram and the electromyogram parameters of respiration, movement (EMG electrodes), the ECG (electrocardiogram) and other possible parameters are registered. Furthermore, constant video monitoring and sound registration allows the clinicians to review the previous night of a patient not only concerning physiological signals but also with respect to behavior. The facility will be newly equipped with the most modern state of the art equipment in spring 2004, as it has been given a grant by the German Research Foundation (DFG) to purchase new equipment.

Besides the chief of the facility several psychiatrists, neurologists and psychologists are involved in diagnostic and scientific studies. Furthermore, several nurses especially trained to record sleep work in the facility, not only during the day but also during the night.



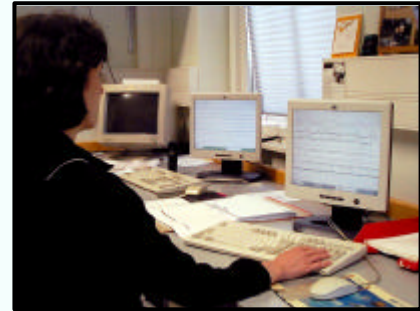
The team is complemented by technical assistants and a physicist responsible for signal analysis. Additionally, in the last 10 years more than 70 students of medicine, psychology and biology have completed their Master's degree or a doctoral dissertation in the work group of Professor Riemann.

## Patient care

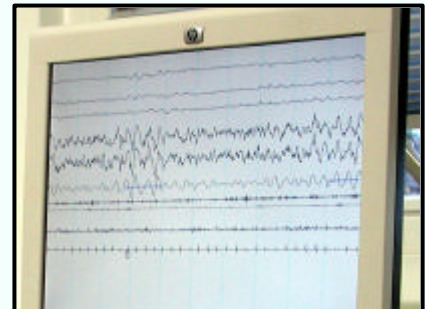
All the physicists and psychologists working in the sleep laboratory participate in the outpatient clinic for sleep disorders. The outpatient sleep disorders clinic was established in 1990 and presently approximately 500 patients are seen per year. Patients are usually sent by their general practitioner or a specialist in psychiatry, neurology, ENT, internal medicine etc. Most of the patients seen in the outpatient clinic suffer from chronic sleep disorders. Main topics are insomnia including the restless legs syndrome and other neurologic-psychiatric sleep disorders (i.e. narcolepsy etc.). There is a close collaboration with the Department of Pneumology of the University (Prof. Dr. Müller-Quernheim, PD Dr. Sorichter) which hosts another sleep laboratory which is specialized on sleep-related breathing disorders.

Prior to investigation in the sleep laboratory patients are seen in the outpatient sleep clinic. For many of the patients counseling or advice concerning pharmaco- or psychotherapy is sufficient to help them overcome their sleep problem.

When the decision is made to perform a sleep study for 2 consecutive nights, patients are scheduled for the investigation within the next 6 weeks. Investigation in the sleep laboratory besides two sleep studies includes routine blood testing, EEG and ECG and if necessary neuroimaging techniques (CT, MRI). Additionally, detailed medical and psychological data are collected during the two days staying in the hospital. Usually, approximately 3 to 5 days after the investigations have taken place all the results from the various sources of information are completed and patients are scheduled for a follow-up visit where together with the patient the test results and their therapeutic implications are discussed. In some cases, patients are treated by the team of the sleep center, but in most cases patients receive a detailed documentation of the results which is also sent to the referring physician, who is in charge of exerting the therapeutic strategies which have been advised by the sleep facility.



Special expertise has been achieved in the area of behavioral treatment of sleep disorders, especially insomnia, with cognitive behavioral techniques. Furthermore, for the restless legs syndrome and narcolepsy new pharmacological agents have been researched extensively by the group. With respect to research, a main emphasis is on sleep changes in patients suffering from depression. Beyond, the role of pharmacotherapy for insomnia (especially antidepressants) has been explored by the group of Professor Riemann and Professor Berger (see reference list).



Center for Sleep Research & Sleep Medicine

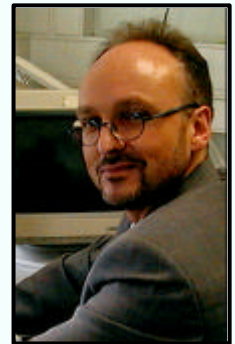
**Team**

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Dr. C. Carl

G. Deeb

## Ongoing research projects

### **Insomnia:**

- Neuroendocrinology and neuroimmunology of primary insomnia
- A multicenter study of polysomnography in primary insomnia
- Gaboxadol for the treatment of primary insomnia
- fMRI and the sleep onset process in insomnia

### **Restless legs syndrome:**

- Magnesium for the treatment of the restless legs syndrome: a double blind placebo controlled study
- Pramipexol for the treatment of RLS and ADHS
- The restless legs register

### **Psychiatric disorders:**

- Sleep abnormalities as predictors of early relapse in alcohol dependency
- Sleep in patients with borderline disorders and ADHS
- The impact of different cholinomimetics on sleep in healthy subjects
- Sleep in children and adolescents with depression

### **Contact:**

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### **Publications:**

[www.forschab.verwaltung.uni-freiburg.de/forschung/index.html](http://www.forschab.verwaltung.uni-freiburg.de/forschung/index.html)