



## Master Thesis Project

### The role of the circadian clock in rheumatoid arthritis

#### Background information

Rheumatoid arthritis (RA) is a chronic auto-inflammatory disease mainly affecting the joints. The risk factors are considered to be multifactorial, including genetic as well as environmental factors. Patient symptoms can show diurnal variation, e.g. increased severity of joint pain and stiffness in the morning. Consistent with that, murine experimental data indicate disruption of the circadian clock in RA. We plan to investigate the role of the circadian clock in rheumatoid arthritis with special regard to the onset of Collagen-Induced Arthritis in mice.

Own experimental ideas in the course of the Master Thesis project are warmly welcome!

#### Methods

Among others:

- RNA extraction from murine samples and cDNA Synthesis
- qPCR to analyse circadian clock and immune-related genes
- Cell culture experiments to investigate the circadian clock in steady state/inflammatory conditions (including live-cell analysis)

#### Requirements

We are looking for a motivated and talented candidate with a good degree in Molecular Biology, Integrated Life Sciences, Immunology or a similar subject.

#### Lab Description

The Zais Lab is part of Medicine 3 and focuses on the role of environmental components (e.g. diet-derived) and how those shape immune responses and inflammation, especially in rheumatoid arthritis.

For further information on the lab feel free to visit our website: <https://www.zaislab.com/>

For additional information on the Master Thesis Project, please contact Nadine Otterbein ([nadine.otterbein@uk-erlangen.de](mailto:nadine.otterbein@uk-erlangen.de)).