TRANSLATIONAL SENSORY & CIRCADIAN NEUROSCIENCE UNIT

TUMCREATE

STUDENT RESEARCH PROJECT

Beyond visible light

Do infrared wavelengths influence human physiology?

Tübingen / Munich · English · Master's thesis · Research internship · Erasmus+ research placement · Engineering project

The question

Does radiation beyond the visible spectrum influence human physiology in ways relevant to photobiology? Answering this requires distinguishing possible responses from thermal effects and other confounding influences.

The project

Explore the evidence and measurement challenges surrounding infrared exposure and human physiological outcomes. The project may combine critical literature work, controlled optical characterisation and an agreed experimental or analytical component. Human exposure work requires appropriate safety assessment and approvals.

What you will do

- Map the evidence and identify how studies account for heat and measurement limitations.
- Support optical characterisation or supervised physiological measurements where approved.
- Analyse data reproducibly and evaluate what the results can and cannot establish.

Possible scope

A thesis could develop a focused physiological or measurement question. An engineering project or shorter placement could concentrate on characterisation or analysis. Optics, experimental physics or quantitative physiology would be useful backgrounds.

Suitable backgrounds

Neuroscience · Medicine · Physics · Engineering · Biomedical engineering

General expectations

You should be able to analyse data in R or Python, use Git and GitHub, and work reproducibly. Independent reading, careful documentation and increasing responsibility are expected. Previous sleep or circadian research experience is not generally required.

Funding

No salary or stipend from the research group unless explicitly stated. Master's theses are generally unpaid. Mention external funding or mobility programmes when applying.

Suggested backgrounds are not formal programme approval. Confirm requirements with your home institution.

How to apply

Send a short motivation, CV, relevant skills, preferred project, dates, format and location. Mention external funding. Contact Prof. Manuel Spitschan using the address below.

Munich: manuel.spitschan@tum.de
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