Lab Rotation Opportunity In Cardiac Optogenetics

Are you interested in engineering next-generation tools for cardiac optogenetics?

We are offering a lab rotation spot at the German Primate Center, where we are developing non-invasive optogenetic approaches to control cardiac activity.

Project:

What if we could control the electrical activity of heart cells using light, without the need for external light sources or implanted devices?

Our research aims to develop a self-illuminating optogenetic platform that enables precise control of cardiac activity. By engineering heart cells to generate their own light, we hope to establish new approaches for studying cardiac electrophysiology and, ultimately, exploring alternative strategies for the treatment of atrial fibrillation without the need for high-energy electrical shocks.

What will you work on?

During this lab rotation, you will have the opportunity to explore different aspects of molecular biology, cardiac cell biology and optical imaging. Your work would include:

- **Molecular biology:** Designing, cloning and optimising novel optogenetic constructs.
- **Cardiac cell models:** Introducing and evaluating constructs in human iPSC-derived cardiomyocytes and rat cardiomyocytes.
- **Functional imaging and analysis:** Recording and analysing cardiac excitation and contraction waves using our custom-built wave dynamics optical setup and Python-based analysis tools.

Who are we looking for?

We welcome motivated students who have an interest in optogenetics, molecular biology, cardiac biology with a curiosity about interdisciplinary research and a willingness to learn new techniques.

The rotation offers an opportunity to connect molecular engineering with cardiac research, gaining hands-on experience across several experimental approaches.

Research group: Translational Cardiac Optics Group, Department of Laboratory Animal Science
Institution: German Primate Center (DPZ), Göttingen, Germany
Preferred start date: February 2027 (later starting dates could be possible by arrangement).

How to apply

If interested please send a few lines about yourself and your CV to Dr. Claudia Richter, crichter@dpz.eu by **1 December 2026**.

For further information or informal enquiries, please feel free to get in touch. We look forward to hearing from you!