



## Starten Sie Ihre Mission beim DLR.

Das DLR ist das Forschungszentrum für Luft- und Raumfahrt sowie die Raumfahrtagentur der Bundesrepublik Deutschland. Rund 8.000 Mitarbeiterinnen und Mitarbeiter forschen gemeinsam an einer einzigartigen Vielfalt von Themen in Luftfahrt, Raumfahrt, Energie, Verkehr, Digitalisierung und Sicherheit. Ihre Missionen reichen von der Grundlagenforschung bis hin zur Entwicklung von innovativen Anwendungen und Produkten von morgen. Spitzenforschung braucht auf allen Ebenen exzellente Köpfe – insbesondere noch mehr weibliche – die Ihre Potenziale in einem inspirierenden Umfeld voll entfalten. Starten Sie Ihre Mission bei uns.

For our **Institute of Aerospace Medicine** in **Köln** we are looking for a candidate for a

## PhD Position Neuronal development and activity under the influence of altered gravity

Research area: Neurobiology, Cell Biology

Ihre Mission:

### Your mission:

Gravity has shaped life on Earth throughout evolution. Consequently, organisms have developed mechanisms to perceive gravity and to use this cue for spatial orientation. Moreover, gravity or lack thereof profoundly affects physiology in single cells and in complex organisms including human beings. For example, microgravity (weightlessness) during space travel elicits changes in neural and immune functions, muscle and bone loss, and cardiovascular deconditioning. These changes are likely explained by direct and indirect influences of gravity on cells. However, the molecular mechanisms mediating these responses are not fully understood. You will work in an interdisciplinary environment at the DLR Institute of Aerospace Medicine in Cologne, Germany. There is the possibility to graduate with a PhD degree from the University of Bonn.

### Your tasks:

In your thesis, you will expose different primary neuronal cells including primary neurons and astrocytes *in vitro* to altered gravity conditions. You will apply our unique research platforms – clinostats and centrifuges – to simulate microgravity and produce hypergravity, respectively. Possibly, you might even perform experiments in real microgravity such as on parabolic flights of aircrafts or sounding rockets. Live-cell imaging during exposure to altered gravity will give insights to cell intrinsic mechanisms and adaptations, such as neuronal developmental processes or changes in neuronal activity. Calcium-sensitive fluorescent imaging, electrophysiological measurements using multi-electrode array systems (MEA), and visualization of alterations in cytoskeletal components will be applied. Furthermore, analysis of subsequent intracellular signaling pathways through biochemical assays and different “Omics”-technologies will be an important part of your work. Your thesis will contribute to a more detailed understanding how gravity triggers changes in neuronal cell function and development.

Ihre Qualifikation:

### Your qualifications:

- completed master studies in biology
- experience with cell culture work is required
- documented interest in neurobiology
- ability to present your work on national and international conferences is required
- excellent English skills in the written and spoken word is required
  
- expertise in animal handling (mouse) is preferred, FELASA B certification is desirable

- knowledge of microscopy applications, especially live-cell imaging, is preferred
- experience with biochemical assays on the DNA-, RNA- and protein level is preferred
- willingness to learn electrophysiological measurements is desirable

Ihr Start:

Freuen Sie sich auf einen Arbeitgeber, der Ihr Engagement zu schätzen weiß und Ihre Entwicklung durch vielfältige Qualifizierungs- und Weiterbildungsmöglichkeiten fördert. Unser einzigartiges Arbeitsumfeld bietet Ihnen Gestaltungsfreiräume und eine unvergleichbare Infrastruktur, in der Sie Ihre Mission verwirklichen können.

Vereinbarkeit von Privatleben, Familie und Beruf sowie Chancengleichheit von Personen aller Geschlechter (m/w/d) sind wichtiger Bestandteil unserer Personalpolitik. Bewerbungen schwerbehinderter Menschen bevorzugen wir bei fachlicher Eignung.

Weitere Informationen zu dieser Position mit der Kennziffer 31005 sowie zum Bewerbungsweg finden Sie unter [www.DLR.de/dlr/jobs](http://www.DLR.de/dlr/jobs).

