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DLR scholarship for interdisciplinary research

23 December 2008

The application deadline has been extended until 31 March 2009.

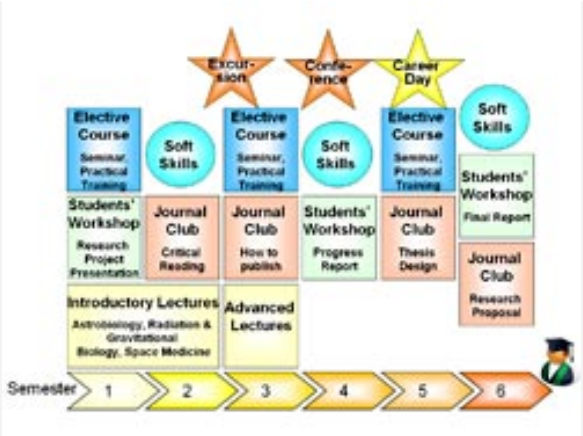
Scholarship applications can be submitted until the end of January 2009

Supine training in a lower body negative pressure device

The "SpaceLife" programme of the German Aerospace Center (Deutsches Zentrum für Luft- und Raumfahrt; DLR) is the winning entry in response to a call for proposals by the Helmholtz Association (Helmholtz-Gemeinschaft) for research scholarship programmes for early-stage researchers, beating competing entries from other Helmholtz Centres. The programme proposed by the DLR Institute of Aerospace Medicine (DLR-Institut für Luft- und Raumfahrtmedizin) will receive funding amounting to 1.8 million euro over a period of six years. Together with additional funds made available by the DLR executive for space research and development, this will allow a scholarship scheme to be set up as of April 2009 for 13 excellent graduates wishing to undertake doctoral research.

Using the Helmholtz funds, the DLR Institute of Aerospace Medicine in Cologne, in collaboration with the universities of Aachen, Bonn, Kiel, Regensburg and the German Sport University Cologne, will establish the first Helmholtz Research School at DLR: an intensive training programme for early-stage researchers from Germany as well as from abroad.

"SpaceLife" will enable young researchers to do interdisciplinary research work in the fields of radiation biology, gravitational biology, and astrobiology, or space physiology and space psychology. The programme is complemented by national and international conferences, as well as scientific seminars and personality development training. "We place the young graduates in internationally renowned research groups. Participation in the programme will have a profound impact on the education of young scientists," says DLR's Dr Christine Hellweg, the coordinator for the Research School.



SpaceLife

The area of space physiology can serve as an example of the research projects covered by the programme. The aim here is to optimise physiological and biomechanical parameters for training leg muscles in weightlessness. This joint project with the German Sport University Cologne investigates new methods for leg muscle training in space. In the context of this project, a combination of a drive system developed by robotic engineers with a lower body negative pressure device will be used for the first time. Due to weightlessness in space, blood supply to the leg muscles of astronauts is reduced. Moreover, the lack of gravitational pull leads to a reduced muscular load in the legs. These factors have a decisive impact on muscle training in space. The new training methods developed in this project should enable an optimal muscular load, which in turn should optimise the blood supply in the legs. This requires new technological solutions, as well as a more profound understanding of biomechanical and physiological processes, to be obtained through the joint efforts of engineers and scientists in the fields of medical engineering, medicine, biology and sports science.

A brochure published by the Institute of Aerospace Medicine provides an overview of the research areas covered by the programme. A wide range of potential doctoral thesis topics is available. Graduates with a previous degree in sciences, psychology, sports science or nutritional science who are interested in the programme can apply for a scholarship until the end of January 2009. The contact person for applications is Ms Anna-Maria Trautmann.

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