



Job ID
1719
Application
until **12.11**

The Leibniz Institute on Aging - Fritz Lipmann Institute (FLI) is a research institute of the Gottfried Wilhelm Leibniz Association, which is financed by the Federal State of Thuringia and the Federal Ministry of Education and Research with 50% each. The main focus of research is to delineate basic molecular mechanisms and its consequences for the development of dysfunctions and aging-related diseases. Around 350 employees work and conduct research at the FLI, with about 25% international employees from approximately 30 nations.

The **Jasper Cooperation Group (Aging of Intestinal Stem Cells: From Flies to Mammals)** of the Leibniz Institute on Aging—Fritz-Lipmann-Institute e.V. in Jena invites applications for a

PhD student position (TV-L E13/2) (Job ID 1719)

We are currently seeking a motivated and talented scientist to join our team as PhD student in the Lab led by Dr. Dr. Jerome Korzelius as part of the Jasper cooperation group.

We study the role of entero-endocrine differentiation in intestinal homeostasis

The intestine is not only an organ that is important for providing the body with nutrients, it also acts as an endocrine signaling center that couples nutritional information to organismal metabolism and feeding behaviour. The entero-endocrine (EE) cells in the intestine mediate these processes through the production of various hormones. Despite their importance, not much is known about how EE cells are formed from their tissue-specific stem cells and the influence EE cells exert on the microbiome, organismal aging and stress responses. In this project, we will use the *Drosophila* intestine to study EE differentiation and the role of EEs in intestinal homeostasis. Highly analogous to the mammalian intestine, the *Drosophila* intestine is maintained by a population of intestinal stem cells (ISCs) that replace damaged cells to maintain organ homeostasis during life. ISC function declines during aging, leading to dysbiosis of the microbiome, highly induced cellular stress pathways and eventual organ failure. Our previous work has shown that the transcription factor *escargot* (*Esg*) plays a central role in maintaining the undifferentiated state of ISCs by repressing differentiation factors in the stem-progenitor compartment. By performing cell-type specific transcriptomics, we identified the transcription factor *klumpfuss* (*Klu*) as a likely regulator of differentiation in the intestine. Our preliminary data show that loss of *Klu* leads to the formation of excess EE cells in the intestine. Conversely, ectopic expression of *Klu* in the *Drosophila* intestinal stem cells (ISCs) leads to a block in EE differentiation. In this DFG-funded project, we will identify the mechanism of *Klu* action in EE differentiation and the role of EE cells in age-related dysbiosis using a combination of genetics, transcriptomics and transcription-factor binding studies. With this effort, we hope to advance our knowledge on entero-endocrine differentiation and the importance of EE cells on organ homeostasis during life.

We offer

- An internationally competitive PhD project in a young research team
- Top-notch facilities and experimental support
- Productive collaborations and plentiful opportunities to further develop professional skills within a multi-disciplinary research team at the Leibniz-Institute on Aging
- The PhD position will be integrated in our Leibniz Graduate School on Aging and Age Related Diseases. The contract conditions and the salary will be according to the collective labor agreement for public service employees of the Federal State of Germany (TV-L E13), 50 % during the first two years and 60 % during the last two years.

Application:

Please acquaint yourself with the LGSA procedures and with the application procedure on our website <http://lgsa.leibniz-fli.de/>, fill in the application form and send it electronically to the LGSA.