

## **Chaperones in focus: FLI heads new DFG research group on protein folding**

**The German Research Foundation (DFG) is funding seven new research groups (FOR) with a total of €33 million. One of these, DFG-FOR 5872, is dedicated to the role of molecular chaperones in the regulation of misfolded proteins in cellular condensates. The aim is to better understand the development of age-related neurodegenerative diseases and to develop new therapeutic approaches. The DFG research group is coordinated by Prof. Dr. Janine Kirstein at the Leibniz Institute on Aging – Fritz Lipmann Institute (FLI) in Jena.**

**Jena.** On the recommendation of the Senate, the Joint Committee of the German Research Foundation (DFG) has decided to establish seven new research groups (DFG-FOR). These will receive a total of around 33 million euros in funding. The establishment of DFG research groups gives scientists the opportunity to address current and pressing issues in their fields. Funding can last up to eight years and is intended to provide targeted support for innovative team research.

The topics covered by the newly funded DFG-FORs are diverse, ranging from socio-ecological issues in cities and the neural basis of communication in vertebrates to the role of molecular chaperones in the regulation of misfolded proteins in cellular condensates.

The latter is an important topic, as proteins that cannot achieve their correct three-dimensional structure pose a significant threat to the health and survival of cells and organisms. Many age-related neurodegenerative diseases such as Alzheimer's, Huntington's, and ALS (amyotrophic lateral sclerosis) arise when misfolded proteins form aggregates or fibrils or accumulate in biomolecular condensates - membrane-less macromolecular structures within the cell. Molecular chaperones are known to play a central role in this process. These proteins support other proteins in their folding, transport, and stability. However, the underlying processes are still largely unclear.

This is exactly where the new research group "Chaperone-mediated regulation of disease-causing amyloid protein conformations in biomolecular condensates" (DFG-FOR 5872) comes in. The aim is to investigate the role of molecular chaperones in the regulation of misfolded, disease-relevant proteins in biomolecular condensates and to clarify how chaperones influence the folding and aggregation of these proteins. The Leibniz Institute on Aging – Fritz Lipmann Institute (FLI) in Jena, with Prof. Dr. Janine Kirstein, group leader at the FLI and professor of biochemistry of aging at Friedrich Schiller University Jena, will be responsible for the central coordination of the DFG research group.

"I am extremely pleased about the DFG's funding commitment. Together with an excellent team of scientists from Germany and Israel, we intend to spend the next few years investigating the central question of how chaperones regulate disease-causing protein conformations in

cellular condensates - a process that is still poorly understood but is important and directly linked to age-related neurodegenerative diseases," reports Prof. Kirstein.

"I congratulate Prof. Kirstein, and all colleagues involved on the successful establishment of this DFG research group. It is of great scientific relevance that the FLI will coordinate an initiative aimed at uncovering how molecular chaperones regulate protein conformations in cellular condensates - a fundamental and still poorly understood mechanism. Advancing our understanding in this area may shed light not only on neurodegenerative diseases but more broadly on age-related cellular dysfunctions," emphasizes the Scientific Director of the FLI, Prof. Dr. Dario Riccardo Valenzano.



#### **FOR5872**

Chaperone-mediated regulation of the emergence of disease-causing amyloids inside biomolecular condensates

**Speaker:** Janine Kirstein / **Co-Speaker:** Simon Alberti

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## Photo



Prof. Dr. Janine Kirstein, Group Leader at Leibniz Institute on Aging – Fritz Lipmann Institute (FLI) in Jena and Professor at Friedrich Schiller University (FSU). (Photo: private)

## Background

The **Leibniz Institute on Aging – Fritz Lipmann Institute (FLI)** – upon its inauguration in 2004 – was the first German research organization dedicated to research on the process of aging. Around 350 employees from around 40 nations explore the molecular mechanisms underlying aging processes and age-associated diseases. For more information, please visit [www.leibniz-fli.de](http://www.leibniz-fli.de).

The **Leibniz Association** connects 96 independent research institutions that range in focus from natural, engineering, and environmental sciences to economics, spatial, and social sciences and the humanities. Leibniz Institutes address issues of social, economic, and ecological relevance.

They conduct basic and applied research, including in the interdisciplinary Leibniz Research Alliances, maintain scientific infrastructure, and provide research-based services. The Leibniz Association identifies focus areas for knowledge transfer, particularly with the Leibniz research museums. It advises and informs policymakers, science, industry, and the general public.

Leibniz institutions collaborate intensively with universities – including in the form of Leibniz ScienceCampi – as well as with industry and other partners at home and abroad. They are subject to a transparent, independent evaluation procedure. Because of their importance for the country as a whole, the Leibniz Association Institutes are funded jointly by Germany's central and regional governments. The Leibniz Institutes employ around 21,400 people, including 12,170 researchers. The financial volume amounts to 2 billion euros. For more information: [www.leibniz-gemeinschaft.de/en/](http://www.leibniz-gemeinschaft.de/en/).