PRESS RELEASE

Katja Luck joins IMB as an Emmy Noether Group Leader

Mainz, 9 September 2020 - *Dr Katja Luck has been awarded a prestigious Emmy Noether Award from the German Research Foundation (DFG) and will start as a new group leader at the Institute of Molecular Biology (IMB). Katja joins us from the Dana-Farber Cancer Institute and Harvard Medical School in Boston, USA, where she worked as a postdoctoral fellow. Her lab will use integrative computational and experimental approaches to decipher the structure and function of protein interactions in neurodevelopmental disorders.*

Cellular functions are dependent on interactions between proteins, as well as between proteins and DNA, RNA, or metabolites within the cell. Mutations, toxins and pathogens can disrupt or modify these protein interactions, perturbing cell function and causing disease. Therefore, to understand the molecular basis of diseases, it is vital to understand which proteins interact in the cell, how and under what circumstances they do so, as well as the functional outcomes of these interactions. The sum of all protein interactions in a cell is called the 'protein interactome'. However, experimentally characterising the interactions of such a large number of proteins is both technically difficult and labour-intensive.

The goal of Katja's research is to develop integrative computational and experimental strategies to predict how proteins interact with each other and the effect of each interaction on cell function. For example, her lab will use computational techniques to predict the regions and specific residues that mediate protein interactions, and how mutations that are linked to disease alter the interactions of the gene's protein product. They will then experimentally validate these predicted protein interaction interfaces and functions in living cells.

By first using computational strategies to make intelligent predictions, Katja's group can significantly speed up the process of building more complete maps of the protein interactome with structural, functional, and cellular context information. Finally, Katja and her group will use these computational tools to investigate how mutations alter protein interactions in neurodevelopmental disorders. By building these tools and resources, Katja's work will make it possible for scientists to study the effects of mutations, toxins, and pathogens on cells more efficiently.

Further details
Katja Luck is an Emmy Noether group leader at IMB. Further information about research in Luck lab can be found at www.imb.de/luck.

About the Institute of Molecular Biology gGmbH
The Institute of Molecular Biology gGmbH (IMB) is a centre of excellence in the life sciences that was established in 2011 on the campus of Johannes Gutenberg University Mainz (JGU). Research at IMB focuses on three cutting-edge areas: epigenetics, developmental biology, and genome stability. The institute is a prime example of successful collaboration between a private foundation and government: The Boehringer Ingelheim Foundation has committed 154 million euros to be disbursed from 2009 until 2027 to cover the operating costs of research at IMB. The State of Rhineland-Palatinate has provided approximately 50 million euros for the construction of a state-of-the-art building and is giving a further 52 million in core funding from 2020 until 2027. For more information about IMB, please visit: www.imb.de

Boehringer Ingelheim Foundation

The Boehringer Ingelheim Foundation is an independent, non-profit organization committed to the promotion of the medical, biological, chemical, and pharmaceutical sciences. It was established in 1977 by Hubertus Liebrecht (1931–1991), a member of the shareholder family of the company Boehringer Ingelheim. With the Perspectives Programme "Plus 3" and the Exploration Grants, the foundation supports independent junior group leaders. It also endows the internationally renowned Heinrich Wieland Prize as well as awards for up-and-coming scientists. In addition, the Foundation is donating a total of 154 million euros from 2009 to 2027 to the University of Mainz for the Institute of Molecular Biology (IMB). Since 2013, the Foundation has been providing a further 50 million euros for the development of the life sciences at the University of Mainz. www.bistiftung.de

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