

## New research initiative investigates gene regulation in evolution and development

**February 2014.** Johannes Gutenberg University Mainz (JGU) has received €900,000 for three years to investigate, jointly with the Institute of Molecular Biology (IMB), how gene regulation affects evolution and development.

GeneRED, or Gene Regulation in Evolution and Development, is a three-year collaborative research initiative jointly run by IMB and JGU's Faculty of Biology. The ambitious new research unit (*Forschungsschwerpunkt*) is funded by the Ministry of Education, Science, Further Education and Cultural Affairs of Rhineland-Palatinate. Its overarching goal is to gain insight into how epigenetics – the regulation of genes by elements outside the classical DNA code – can influence the development of organisms, both in the short term (growth and aging) and the long term (evolutionary adaptation).



The initiative aims to significantly strengthen research into gene regulation on the campus of Johannes Gutenberg University Mainz (JGU). To achieve this, it will fund six PhD positions at JGU's Faculty of Biology over three years (2014-2016). The questions these students are studying are:

- How did division of labour evolve in social insects like ants, and which genes are involved?
- How does the NURF complex help maintain neural stem cell identity in fruit flies?
- What are the targets of the NG2 protein in glial cell development and tumours?
- How do ciliary proteins affect DNA damage response and gene regulation in Usher syndrome?
- What are the roles of genetic regulatory elements in the modern human adaptation to an agriculturalist diet and predisposition to metabolic syndrome?
- Which epigenetic factors are involved in creating body size memory in fruit flies?

The participating PhD students will be fully integrated into the International PhD Programme on the “Dynamics of Gene Regulation, Epigenetics and the DNA Damage Response”—a joint programme coordinated by IMB with groups from IMB, JGU, the Mainz University Medical Centre and the Max Planck Institute for Polymer Research.

The initiative will also help expand access to modern proteomics technologies for scientists at JGU and IMB. With proteomics becoming a key methodology in modern biomedical research, the support provided through this initiative will be crucial in ensuring that research in Mainz is internationally competitive.

The chairs of the GeneRED project are Hans Zischler, Dean of the Faculty of Biology at JGU, and Christof Niehrs, Founding & Executive Director of IMB. The General Manager of GeneRED is Ralf Dahm, IMB's Director of Scientific Management.

Further information about GeneRED can be found at [www.imb.de/GeneRED](http://www.imb.de/GeneRED).

#### **About the Institute for Molecular Biology gGmbH**

The Institute of Molecular Biology gGmbH (IMB) is a centre of excellence in the life sciences that was established in 2011. Research at IMB concentrates on three cutting-edge areas: epigenetics, developmental biology, and DNA repair. The institute is a prime example of a successful collaboration between public authorities and a private foundation. The Boehringer Ingelheim Foundation has dedicated € 100 million for a period of 10 years to cover the operating costs for research at IMB, while the state of Rhineland-Palatinate provided approximately € 50 million for the construction of a state-of-the-art building. For more information about IMB please visit [www.imb.de](http://www.imb.de)

#### **About the Boehringer Ingelheim Foundation**

The Boehringer Ingelheim Foundation is an independent, non-profit organisation 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. Through its PLUS 3 Perspectives Programme and Exploration Grants, the foundation supports independent group leaders; it also endows the internationally renowned Heinrich Wieland Prize as well as awards for up-and-coming scientists. The foundation has granted € 100 million over a period of ten years to finance the scientific activities of the Institute of Molecular Biology (IMB).

#### **Press contact for further information**

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