Website address:
https://www.gesundheitsindustrie-bw.de/en/article/press-release/ai-and-life-sciences-two-new-research-training-groups-universitaet-heidelberg

AI and life sciences: two new research training groups at Universität Heidelberg

Heidelberg University has been successful in the current approval round of the German Research Foundation (DFG) with two applications for the funding of Research Training Groups. RTG 3251 "From Omics to Mechanisms", which is located in the life sciences, seeks to develop new methods of obtaining, analyzing and interpreting extensive biological datasets. Research Training Group 3270 "Generative AI in the Sciences" focuses on artificial intelligence. In this group to train the next generation of scientists, doctoral researchers learn how to develop generative models for the natural and life sciences. The DFG is funding the two new Research Training Groups with the total amount of around 11.2 million euros over a period of five years each.

RTG 3251 concentrates on what are called omics data. These extensive datasets make it possible to examine biological systems at different molecular levels, for example relating to their genes (genomics), proteins (proteomics) or metabolic products (metabolomics). Making scientific use of this data requires robust methods of analysis and interpretation. In the first funding period from January 2027, a total of 15 young researchers will work in five teams of three on deriving new hypotheses from omics datasets, and on experiments to explain the underlying biological mechanisms. To do so, they are to use advanced methods of statistics and bioinformatics, as well as mathematical modeling. The spokesperson will be Prof. Dr. Dirk Grimm, a scientist at the Medical Faculty Heidelberg and Executive Director of Heidelberg University's BioQuant Center. Besides project leaders from the Faculty of Biosciences, the Faculty of Engineering Sciences and the Medical Faculty Heidelberg, other partners in the Research Training Group "From Omics to Mechanisms" are from the German Cancer Research Center and the European Molecular Biology Laboratory in Heidelberg as well as Universitätsklinikum Erlangen. For their projects, the DFG is providing around 5.5 million euros in funding.

Generative artificial intelligence is changing the way scientific findings emerge. RTG 3270 will start its work at Heidelberg University with the aim of enabling young researchers to involve AI in the investigatory process across their disciplines. From April 2027, two successive cohorts of ten doctoral researchers each will work on developing generative AI models that consider key concepts of scientific work from scratch and can be put to interdisciplinary use in the natural and life sciences. The focus is on a form of training that combines the imparting of specialist scientific knowledge with advanced mathematical approaches to model development and experimental validation. Besides scientists from the Faculty of Physics and Astronomy, the Faculty of Biosciences and the Interdisciplinary Center for Scientific Computing of Heidelberg University, experts from the European Molecular Biology Laboratory and the German Cancer Research Center are participating in the studies in the "Generative AI in the Sciences" Research Training Group. The spokesperson of RTG 3270 is Prof. Dr. Tristan Bereau, a scientist at Ruperto Carola's Institute for Theoretical Physics. The DFG is funding the research activities with approximately 5.7 million euros.

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Source: Heidelberg University

Further information

- Heidelberg University