

The Bavarian research network: “New Strategies Against Multi-Resistant Pathogens by Means of Digital Networking”  
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Call for Applications, May 10<sup>th</sup> 2019

1. Overview of the research focus

According to the World Health Organization, microbial resistances, especially against antibiotics, pose an immense long-term threat to the health and life of humans. Drugs against widespread pathogens are becoming increasingly ineffective. More and more bacteria are resistant not only against the majority of commonly used antibiotics but also against recently developed ones. More patients than ever become infected with multi-resistant, gram-negative germs in hospitals or during stays abroad. In addition, lines of methicillin-resistant staphylococcus aureus (MRSA) play an influential role. Many research approaches are being undertaken worldwide. It is becoming apparent that the development of antibiotic substances in the conventional sense is not sufficient. A completely new approach, a detailed analysis of the interactions between host and pathogen as well as the use of state of the art technology will have to complement existing strategies.

The Bavarian research network “New strategies against multi-resistant pathogens by means of digital networking” aims to fund approaches in basic science that address the interaction between pathogen and host during the process of infection. The objective is to gain a deeper understanding of the molecular processes of infection. Based on this foundation, new strategies are to be developed, allowing the successful treatment of multi-resistant pathogens in the long term.

The new insights gained from the program on molecular processes and immunological complex relationships could also be of importance for the therapy of other diseases, such as malignant tumors. Through joint data management, all data including its analysis will be made available to all network partners. For this, a data platform across all projects will be established.

Research projects from the following areas will be taken into consideration for funding:

- o Host-pathogen interaction (as point of departure for understanding the processes which take place on a molecular level and the development of customized antibacterial therapies and vaccinations)
- o Composition and interactions of the human microbiome
- o Development and spread of resistance
- o Immunological and other host-related approaches (as well as their

understanding for prevention and control of infection)

Projects from the above areas may also include data analysis, data management, data modeling or the development of novel algorithms, all of which can be subject to funding.

## 2. Funding schemes

Within the research network, up to seven interdisciplinary research groups are funded for a maximum duration of five years (pending a successful interim evaluation after approximately two years).

The research groups are composed of two to three academic partners or, where applicable, a central academic core facility (in the areas of sequencing, proteomics or metabolomics). All members of a research group have to be associated with a state university in Bavaria or a school of higher education for applied science. As cooperation partners, all partners apply together for a joint research project.

By promoting and connecting interdisciplinary research groups, the existing expertise in Bavaria will continue to be focused and strengthened. The synergy of basic research and translational research, combined with a network-wide joint data management for all funded research groups, creates the opportunity to take into account “open science” approaches.

Each research group can apply for a maximum of 1,375,000 Euro for the entire funding period (i.e. approximately 275,000 Euro per year). The actual funding sum depends on the evaluation of the application. It is possible to apply for funds covering human resources, material costs (consumables, travel expenses, external services) and small-scale investments, if these are not subject to specialized procedures (such as large appliances acquisition).

## 3. Prerequisites and selection criteria

Scientists with expertise and experience who are members of a Bavarian state university (or any school of higher education for applied science) are eligible for funding. The association with a Bavarian state university has to be guaranteed/certified for the entire funding period.

The applicant has to be willing and be in a position to perform the work described within the research proposal himself or herself.

One prerequisite for this is access to the necessary basic equipment (suitable laboratory and office space as well as infrastructure), which has to be confirmed in writing by the respective Head of Institute.

The research groups will be chosen based on the following criteria:

- o Scientific excellence, accounted for by publications (where quality is decisive), awards and distinctions, third-party funds (based on expert panel evaluation), existing cooperations, etc.

- o Originality, plausibility and feasibility of the research proposal
- o Appropriateness and coherence regarding the requested funds

#### 4. Assessment, decision and support

A scientific advisory board, consisting of internationally renowned experts, will review, accompany and evaluate the scientific work of the applicants and ultimately of the funded research groups. The scientific advisory board will initially make recommendations regarding the selection of applicants. After approximately two years, the scientific advisory board will give recommendations based on an interim evaluation regarding the continuation of funding as well as further development of the research projects.

The Bavarian State Ministry of Science and the Arts holds the final decision regarding the establishment, funding of a research group as well as their continuance based on the recommendations made by the scientific advisory board.

#### 5. Network structure and membership

The scientists who are part of the research groups are associated with Bavarian state universities or schools of higher education for applied science. At the same time, they are members of the planned research network.

The research network should stand out in particular due to scientific exchange and joint data management between the research groups. The members of the network are obliged to enter their data into the communal data platform. User rights and agreements can be assigned individually. The participation in seminars and symposia serves as the basis for scientific exchange and mutual support.

The progress of the research network is accompanied by the scientific spokesperson/advisor of the planned network, Prof. Dr. Horst Domdey (managing director of BioM Biotech Cluster Development GmbH and spokesperson of the "Cluster Biotechnology in Bavaria").

#### 6. Application details and support

The application forms are available for download at [www.bayresq.net](http://www.bayresq.net). Only applications which meet the following requirements will be taken into consideration:

- o The application shall not to exceed 15 pages (without supplemental materials).
- o The application is to be self-explanatory and should manage without citations or annexed publications.
- o In addition, it is expected that the application - if necessary for the implementation of the research project - includes a complete and coherent concept for the acquisition of third-party funds and additional grants.
- o The applicants agree to enter/feed all data acquired within their proposed research project into the joint data platform. They grant data usage to all network members and consent to data security and safety guidelines, which are specified by the bayresq.net managing office.

For more details, please refer to the specific application requirements (see [www.bayresq.net](http://www.bayresq.net) – Application Requirements).

The application is to be submitted by June 28, 2019 in English or German language electronically to [applications@bayresq.net](mailto:applications@bayresq.net) as a single PDF document, as well as in printed form by post, signed by all cooperation partners, to the managing office of the research network.

If you have questions regarding the application process, please contact the managing office of [bayresq.net](http://bayresq.net):

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