# PRESS RELEASE

## Excellence Strategy Funds Bonn Cluster for Immune Research

Cluster of Excellence ImmunoSensation$^3$ receives funding to research immune diversity

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**Bonn, Mai 22 – The Bonn Cluster of Excellence ImmunoSensation3 will be funded for a further seven years as part of the Excellence Strategy of the German federal and state governments. The aim of the new funding period, which begins on January 1, 2026, is to research immune diversity: the structural, functional and dynamic diversity of the immune system. It is one of eight Clusters of Excellence at the University of Bonn. The University Hospital Bonn (UKB) and the German Centre for Neurodegenerative Diseases (DZNE) are involved. The funding amounts to around 50 million euros.**

### Focus on Diversity

The immune system is not a static system, but is highly variable. In addition to genetic factors, its structure, function and dynamics depend on environmental influences, lifestyle, gender, previous illnesses and age. “These influences are then reflected at the molecular, cellular and systemic level of the body,” says Prof. Gunther Hartmann, who is leading ImmunoSensation$^3$ into the new funding phase together with Prof. Anja Schneider and Prof. Andreas Schlitzer. “In their entirety, they create a unique constellation in each person, which we call the immune type”. Accordingly, not only is the immune system of each individual person unique, it is also subject to constant change. The resulting natural diversity of the immune system is referred to as immune diversity. It forms the basis for the adaptive performance of the immune system and enables an individually varying immune response to pathogens such as viruses or bacteria, or to tissue damage, as occurs in connection with common diseases such as Alzheimer's, cancer, heart attacks or rheumatism. The aim of ImmunoSensation$^3$ is to better understand the variability of the immune system in order to enable individualized and precise approaches for diagnostics, prevention and therapy. New technologies from single-cell biology, multi-omics and artificial intelligence are used to precisely analyze and predict complex immunological processes.

### Excellent structures for outstanding research

ImmunoSensation$^3$ is a further development of the two previous funding programs ImmunoSensation and ImmunoSensation$^2$ and, like these, an interdisciplinary joint project of the University of Bonn, the University Hospital Bonn (UKB) and the German Center for Neurodegenerative Diseases (DZNE). Over 80 research groups from the fields of immunology, neuroscience, systems biology, bioinformatics, mathematics and clinical research work closely

together. The cross-institutional cooperation promotes synergies between basic research and translational medicine – the transfer of results from research into concrete medical applications.

The cluster's infrastructure offers ideal conditions for this: Modern technology platforms, joint graduate schools and an intensive scientific exchange create an environment in which innovation can flourish. “Through the close integration of clinical research units, findings on immune diversity can flow directly into the development of new diagnostic and therapeutic approaches,” says Prof. Anja Schneider. At the same time, the cluster specifically promotes young scientists through structured career paths and international exchange formats.

**Groundbreaking breakthroughs**

Since its foundation, ImmunoSensation has provided decisive impetus for the understanding of the immune system. The cluster has contributed significantly to the identification and characterization of important sensors of the innate immune system, deciphered new mechanisms of immune activation and established the concept and term of immune sensing internationally through its successes. In essence, the immune system is regarded as an immune-sensory system, i.e. a sensory organ. “This concept describes the ability of the immune system not only to react to threats, but also to permanently monitor and classify the processes in the body and react as required,” explains Prof. Andreas Schlitzer.

In the coming funding period, this foundation will be used to address the next scientific challenge: systematic research into immune diversity. Insights into how and why the immune system differs between people and across life stages will not only pave the way for individualized therapies, but will also fundamentally change medicine - towards a deeper understanding of human health, earlier disease prevention and more effective treatments for an ageing global population.

**Image material:**

**Caption:**
**The speakers of ImmunoSensation:** (from left) Prof Gunther Hartmann, Prof Anja Schneider, Prof Waldemar Kolanus (current speaker, ImmunoSensation2) and Prof Andreas Schlitzer (future speaker ImmunoSensation3**).**

**Picture credits:** ImmunoSensation / Volker Lannert

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**About Bonn University Hospital:** The UKB treats around 500,000 patients per year, employs around 9,500 staff and has total assets of 1.8 billion euros. In addition to the 3,500 medical and dental students, 550 people are trained in numerous healthcare professions each year. The UKB is ranked first among university hospitals (UK) in NRW in the Focus Clinic List, had over 100 million third-party funds in research in 2023 and has the second highest case mix index (case severity) in Germany. The F.A.Z. Institute awarded the UKB first place among university hospitals in the category "Germany's Training Champions 2024".