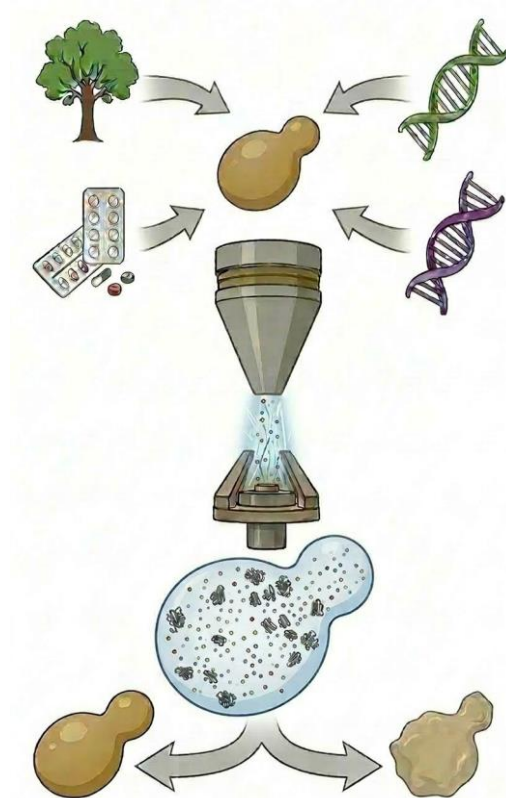


## VAAM Research Award to Johannes Hartl



### How microbes adapt their fitness

Dr. Johannes Hartl receives the 2026 VAAM Research Prize for new research findings into the interplay of genes, the environment, and metabolism in microorganisms. The molecular biologist from the Berlin Institute of Health and Charité – Universitätsmedizin Berlin provides insights into the molecular processes occurring in microbial cells, thereby opening up new avenues for more effectively combating pathogens. The prize, worth 10,000 euros and awarded for outstanding current work in microbiology, will be presented by the Association for General and Applied Microbiology (VAAM) at its annual conference in Berlin on March 22, 2026.



**Genetic differences and the environment influence microbial metabolism. Modern methods of mass spectrometry detect changes in molecular levels that lead to differences in microbial growth and behavior.** © Hartl

Microorganisms adapt superbly to their environment: they colonize diverse habitats and respond flexibly to changing conditions—through genetic changes or by rapidly adjusting their metabolism and protein composition. Modern methods now allow for a systematic look at these processes. Hartl creates a kind of “fingerprint” of the cells’ proteins and metabolic products using mass spectrometry. This allows conclusions to be drawn about how microbes regulate their metabolism and thus enable survival under various environmental conditions.

Hartl found a striking example of this interaction in yeast cells lacking a mitochondrial genome. Cells compensate for the resulting limitations through genetic mutations in the cell nucleus, as well as through changes in metabolism. Surprisingly, the addition of appropriate nutrients can compensate for this serious defect.

However, adaptations of yeast to the human body, for example, are usually the result of many small mutations. To better understand the complex underlying mechanisms, Hartl and an international team examined thousands of natural genetic variants from two yeast strains—one from a winery, the other from a patient. “We want to identify the differences between pathogens and their harmless relatives and later use this for therapeutic approaches,” Hartl hopes. They are analyzing how the different genetic makeup influences the concentration of thousands of proteins. Many mutations initially remain outwardly inconspicuous but lead to striking differences in molecular patterns. “Using molecular maps, we identify important genetic variants and predict their effects even before they become outwardly visible under certain en-

vironmental conditions,” explains the molecular biologist. “This allowed us to predict, without further experiments and based solely on protein data, which strains are more susceptible to an antifungal agent.”

Hartl’s approaches provide the basis for a deeper understanding of the role of metabolism in microbial adaptability. With funding from a prestigious European ERC Starting Grant, his research group is now applying these approaches to host-pathogen interactions in order to better understand the molecular mechanisms underlying fungal infections. Such largely overlooked diseases kill more than 1.5 million people worldwide each year.

Hartl’s approaches lay the groundwork for a The VAAM Selection Committee praises Hartl’s “exceptional talent, his well-thought-out and creative research approaches, and his vision.” He is highly self-motivated, has a very international profile, and uniquely combines biochemistry and analytics with microbiology and clinical approaches. “Hartl’s work has led to a wealth of exciting discoveries and opened up new and interesting avenues of research,” says VAAM President Nicole Frankenberg-Dinkel. Colleagues praise him as an exceptional, independent scientist, a great communicator, and a team player. As such, the VAAM views him as an exemplary ambassador for young microbiologists.

*Anja Störiko (VAAM)*



**Dr. Johannes Hartl**  
(private)

**Dr. Johannes Hartl** (37) leads a research group at the Berlin Institute for Health (BIH) and Charité – Universitätsmedizin Berlin. He studied molecular biology in Vienna, with stints in Ottawa and Cambridge. In 2018, he earned his Ph.D. under Prof. Dr. Julia Vorholt at ETH Zurich in Switzerland; his dissertation was awarded the ETH Medal in 2019. Following an SNF-funded postdoc at Charité – Universitätsmedizin Berlin under Prof. Dr. Markus Ralser, he took on a group leader position at the BIH in 2023. In 2025, he received an ERC Starting Grant. Information: <https://www.bihealth.org/en/research/research-group/systems-biology-and-systems-medicine-of-metabolism>

**VAAM** (Vereinigung für Allgemeine und Angewandte Mikrobiologie, Association for General and Applied Microbiology) represents around 3300 microbiologically orientated scientists from research and industry. The spectrum of research ranges from bacteria, archaea, and fungi in food and water to pathogens, genome analyses, and the industrial use of microorganisms and their enzymes. This year’s annual conference will take place on 22-25 March in Berlin (<https://vaam-kongress.de/>).

**Information, contact, images:**

Dr. Anja Störiko | Tel. +49 (0)6192 23605 | [vaam@stoeriko.de](mailto:vaam@stoeriko.de)

VAAM office:

Dr. Katrin Muth | Mörfelder Landstraße 125 | D- 60598 Frankfurt am Main |

Tel: +49 (0)69 66056720 | [www.vaam.de](http://www.vaam.de)

