

DFG approves two Collaborative Research Centres

In the current selection round, the German Research Foundation (DFG) has granted funding for two new Collaborative Research Centres at the University of Konstanz. Over the next four years, the research teams will be working intensively on trigger signals in biological cells as well as on "silence" and "noise" in human speech.

Cells are a significant unit of life, signals a significant unit of language. In this respect, the two newest Collaborative Research Centres (SFB) at the University of Konstanz have something in common. Their research focus, however, differs widely: While SFB 1756 "Chemical and Biological Principles of Cellular Trigger Responses" investigates how cells perceive and process certain signals, SFB 1760 "Silence, Noise and Signal in Language" aims to get to the bottom of signal interference and silence in language. Both SFB initially receive funding for a period of four years, an extension for a further eight years is possible.

"New Collaborative Research Centres are always a significant moment for our university, as these centres bring together different research teams, allowing them to pool their expertise on a common topic. And when researchers think outside their boxes in such projects, answers can also be found to bigger questions. This is what makes things so exciting", says Dirk Leuffen, Vice Rector for Research, Innovation and Impact at the University of Konstanz.

SFB 1756 - What "triggers" our cells

Cells constantly sense and react to chemical and physical stimuli, either from the environment or from the cells themselves. Although the precise reaction to such "triggers" is crucial for the viability and functionality of cells, many fundamental questions concerning their generation, perception and processing at the molecular level are still unsolved. The new interdisciplinary SFB 1756 "Chemical and Biological Principles of Cellular Trigger Responses", involving chemists and biologists from the University of Konstanz, aims to unravel the molecular mechanisms behind these processes.

"We primarily want to investigate how cells perceive changes in their environment, how they process different triggers to generate suitable cell responses and how these responses ultimately change the physiology of the cell. We also aim to find out whether we can influence or even control these processes at the molecular level", says Erika Isono, summarizing the main objectives of the new SFB. Erika Isono is a professor of plant physiology and biochemistry at the University of Konstanz and spokesperson of SFB 1756. In order to achieve these goals, the SFB members will develop and apply innovative chemical biology tools and approaches. "By elucidating the core principles of cellular trigger responses, our SFB will lay the foundation for future biotechnological applications and new therapeutic approaches in the long term", says Isono.

SFB 1760 – silence and noise in speech

In theory, every language follows hard and fast rules in terms of grammar, pronunciation, meaning of sentences, etc. In practice, these rules are disregarded quite casually and yet the intended signal is usually decoded unproblematically and smoothly by the recipient. In interdisciplinary projects, SFB 1760 "Silence, Noise and Signal in Language" investigates the use of both noise and silence in the production of a signal. The SFB pursues the hypothesis that, rather than representing a stumbling block, the targeted deployment of both silence (for example, pauses in a lecture, uncomfortable questions that remain unanswered) and noise (for example, using variation in pronunciations to mark social identity, overlaps in conversation to signal agreement) is what allows the flexible application of rules in the first place and is what makes human communication so robust.

"Our research projects are based on the assumption that 'silence' and 'noise' are fundamental features of human speech. Our new working hypothesis is that they are significant factors in enabling two persons talking to understand each other, especially if they do not come from the same background", says Miriam Butt, professor of general linguistics and computational linguistics at the University of Konstanz and speaker of SFB 1760. One of the researchers' main goals will therefore be to get to the bottom of the exact systematics behind the occurrence and effect of these two linguistic elements and to develop an interpretation algorithm.

Info:

Collaborative Research Centres are long-term university-based research institutions, established for up to 12 years, that are funded by the German Research Foundation (DFG). In these centres, researchers from different fields work together within a multidisciplinary research programme, setting institutional research priorities and thus strengthening cutting-edge research at the participating universities.

SFB 1756: "Chemical and Biological Principles of Cellular Trigger Responses"

- Investigates at the molecular level the development of trigger signals, their perception as well as their processing by cells and explores ways of controlling these processes
- Speaker is Erika Isono, professor of plant physiology and biochemistry at the University of Konstanz

SFB 1760: "Silence, Noise and Signal in Language"

- Studies the influence of silence and noise in the use and understanding of language
- Speaker is Miriam Butt, professor of general linguistics and computer linguistics at the University of Konstanz and Principal Investigator at the Cluster of Excellence "The Politics of Inequality"

Press release

21-Nov-2025

Source: University of Konstanz

Further information

- ▶ [University of Konstanz](#)