



Deutsche Forschungsgemeinschaft
German Research Foundation

Leibniz Lecture

Inhibition in the brain and spatial memory

Professor Dr. Hannah MONYER

Gottfried Wilhelm Leibniz Prize 2004

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German Cultural Center, Tokyo, Japan



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CURRICULUM VITAE

09/2009	Helmholtz W3 Professor at the DKFZ Heidelberg
2009	ERC Advanced Grant, proposal no. 250047, „GABAcellsAndMemory“
2005	Prix Franco-Allemand Gay-Lussac – Humboldt
2004	Gottfried Wilhelm Leibniz Prize awarded by the DFG
05/1999	C4 Professor, University of Heidelberg
1999	Bundesverdienstkreuz am Bande
10/1994 – 04/1999	Schilling-Foundation C3 Professor at the ZMBH
10/1989 – 09/1994	Postdoc at the ZMBH, University of Heidelberg
07/1986 – 09/1989	Postdoc at Stanford University Medical Center, USA
07/1984 – 06/1986	Resident, Dept. Pediatric Neurology, Univ. Lübeck
1977 – 1982	Scholarship Award of the Studienstiftung des Deutschen Volkes
09/1976 – 07/1982	Medical School, Heidelberg University (Dr. med.)

FIELDS OF INTEREST

Synaptic plasticity; Postnatal neurogenesis; Cellular and network mechanisms underlying learning and memory



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Abstract

Many cognitive processes, including learning and spatial memory, require the synchronous activity at the millisecond range of many hundred neurons. My lab works on GABAergic cells, i.e. those neurons that are the major source of inhibition in the brain and control the timing of neuronal activity. Metaphorically speaking, in a network, GABAergic neurons can be viewed as 'directors' whilst the other neurons constitute the 'players' in an orchestra. For decades we have studied GABAergic interneurons at the molecular, cellular, network and behavioral level, seeking to find out what properties enable GABAergic neurons to exert their function of controlling the timing of neuronal activity in large networks. I will illustrate how we employ different techniques, including mouse genetics and optogenetics, and seek to elucidate the function of GABAergic interneurons in the hippocampal-entorhinal complex, which is a brain structure involved in learning and spatial memory.

The **Gottfried Wilhelm Leibniz Prize** is the highest honour awarded in German research. Established in 1985, the prize provides an unparalleled degree of freedom to outstanding scientists and academics to pursue their research interests. Up to ten prizes are awarded annually with a maximum of €2.5 million per award. Prize recipients are awarded the prize solely on the basis of the scientific quality of their work. The Leibniz Prize honours the well-known scientist and humanist Gottfried Wilhelm Leibniz (1646-1716), who was a leading figure in the fields of philosophy, mathematics, physics and theology.

The **German Research Foundation (DFG)** is the central, self-governing organization funding science and basic research in Germany. Serving all branches of science and the humanities, its members comprise German research universities, non-university research institutions, scientific associations and the Academies of Science and the Humanities.

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The DFG organizes Leibniz Lectures in different regions across the world in order to promote the prize, the research conducted by the prize holders, and the high quality of German science in general.