Obituary for Prof. Dr. Ulrike Alexiev (†29.12.2023)

It was with bewilderment, dismay, and great sadness that we received the news of the completely unexpected death of our esteemed colleague and mentor Prof. Dr. Ulrike Alexiev. In Ulrike, we have lost a person who successfully contributed to shaping the Department of Physics for many years as a committed teacher, head of a scientific working group and, in particular, as a mentor to numerous young scientists.

After completing her diploma studies (1983-1988) in biophysics at Humboldt University Berlin and working at the Max Delbrück Center in Berlin-Buch, Ulrike joined the Department of Physics at Freie Universität in 1990 as a doctoral student, where she received her doctorate in 1994 under Prof. Maarten P. Heyn. During her doctorate, she worked closely with the laboratory of Nobel Prize winner Har Ghobind Khorana (MIT, USA). Ulrike continued many of the scientific collaborations that resulted from this later on, and some developed into personal friendships. Her dissertation was awarded the Tiburtius Prize of the Berlin universities.

After research stays at the University of Virginia (USA) and the Massachusetts Institute of Technology (MIT), she completed her habilitation in biophysics at the Department of Physics in 2002. Since then, as a professor and university lecturer, she has taught courses in biophysics and general physics for students in the minor subject with great professional and pedagogical commitment. Even before her habilitation, she led an independent research group.

Ulrike's field of research was molecular biophysics with a focus on biological photoreceptors. This research began with bacteriorhodopsin and led via rhodopsin and channelrhodopsin to phytochromes. Ulrike also became increasingly interested in biomedical issues and investigated the functional mechanism of the oxygen-consuming cytochrome c oxidase, the transport of substances through the skin and, most recently, the properties of hydrogels as a model for human mucus. Based on her interdisciplinary expertise, she and her colleagues successfully operated molecular genetics laboratories at the Department of Physics. Her particular methodological biophysical expertise lies in the use of fluorescence probes for spectroscopic, imaging and time-resolved methods, which has been reflected in numerous publications on methodological developments.

Ulrike's outstanding research achievements and her wide-ranging interest in various fields of research have led to her being a member of an extraordinary number of Collaborative Research Centers. She was not only a founding member of the SFB 1078 "Protonation Dynamics in Protein Function", but also the dedicated head of its graduate school (Research Training Group) for the last 11 years. Supporting younger scientists has always been particularly important to Ulrike. In addition, she was deputy spokesperson of the SFB 449 "Structure and Function of Membrane Receptors" and project leader in the SFB 1112 "Nanocarriers: Architecture, Transport and Targeted Delivery of Drugs for Therapeutic Applications" and in the SFB 1449 "Dynamic Hydrogels at Biological Interfaces".

Ulrike was not only an excellent scientist, but was also actively supporting the development of molecular biophysics in the German Society for Biophysics. She was a member of the board there from 2007 to 2012. She also realized her love for biophysics by coordinating numerous outreach events in the realm of science communication, teaming up with the students and staff of the graduate school of the SFB 1078 (see https://www.sfb1078.de/igk2/outreach2/).

Ulrike, we will miss you very much!

Joachim Heberle and Holger Dau for the Department of Physics