

INAUGURAL LECTURE



Prof. Frans Mulder, PhD
Institute of Biochemistry

Frans Mulder studied Chemistry at Utrecht University (NL), where he graduated in 1993. Having been inspired through student exchange at the University of Bologna (IT) for his undergraduate thesis on protein NMR spectroscopy, he obtained a research fellowship to study nuclear spin relaxation with Prof. Kowalewski in Stockholm (SE). Combining these topics, he wrote his PhD thesis on protein dynamics by NMR relaxation at Utrecht University (promotors Prof. Kaptein and Prof. Boelens), which was awarded the highest distinction (*cum laude*). Supported by post-doctoral fellowship awards, he continued working in the field of protein dynamics with Prof. Kay in Toronto (CA) and Prof. Akke in Lund (SE). His scientific career then brought him and his family from Groningen (NL) via Aarhus (DK) to Linz (AT), with visiting professorships at Calgary (CA), Rome (IT), and Firenze (IT).

He was appointed full professor and head of institute at Johannes Kepler University on December 1, 2021. His research work focuses on the development of NMR spectroscopy and applications of experimental and computational biophysics to a variety of puzzles in biochemistry, including protein structure, dynamics, electrostatics, small molecule metabolomics, drug design and protein engineering. Frans Mulder is passionate about the acquisition of knowledge and scientific exchange and aspires to inspire others in their quest.

Monday, May 22, 2023, 4.00 p.m.
JKU, Ceremony Room (Uni Center, 1st floor)

Puzzles of Molecular Structure and Dynamics

Biochemistry is concerned with the discovery and description of the chemical and physical processes taking place within living organisms and in their interaction with the environment. In the new Institute of Biochemistry, our research and teaching focuses on the quantitative understanding of proteins at the molecular scale.

In a short tour into the world of the invisible, I will describe how we use the tiny nuclei of atoms as magnetic reporters of biomolecular structure and dynamics. This technology, Nuclear Magnetic Resonance (NMR) spectroscopy, provides a connection between the wonderful world of quantum mechanics and the fascinating field of molecular biophysics. In our quest to solve fundamental biochemistry puzzles, we apply NMR spectroscopy and integrate the information with further experimental and computational techniques. At the same time, we educate and train the researchers and scientists of tomorrow.