

NOMIS Foundation ETH Fellowship 2024

Welcome to

David Schnettler

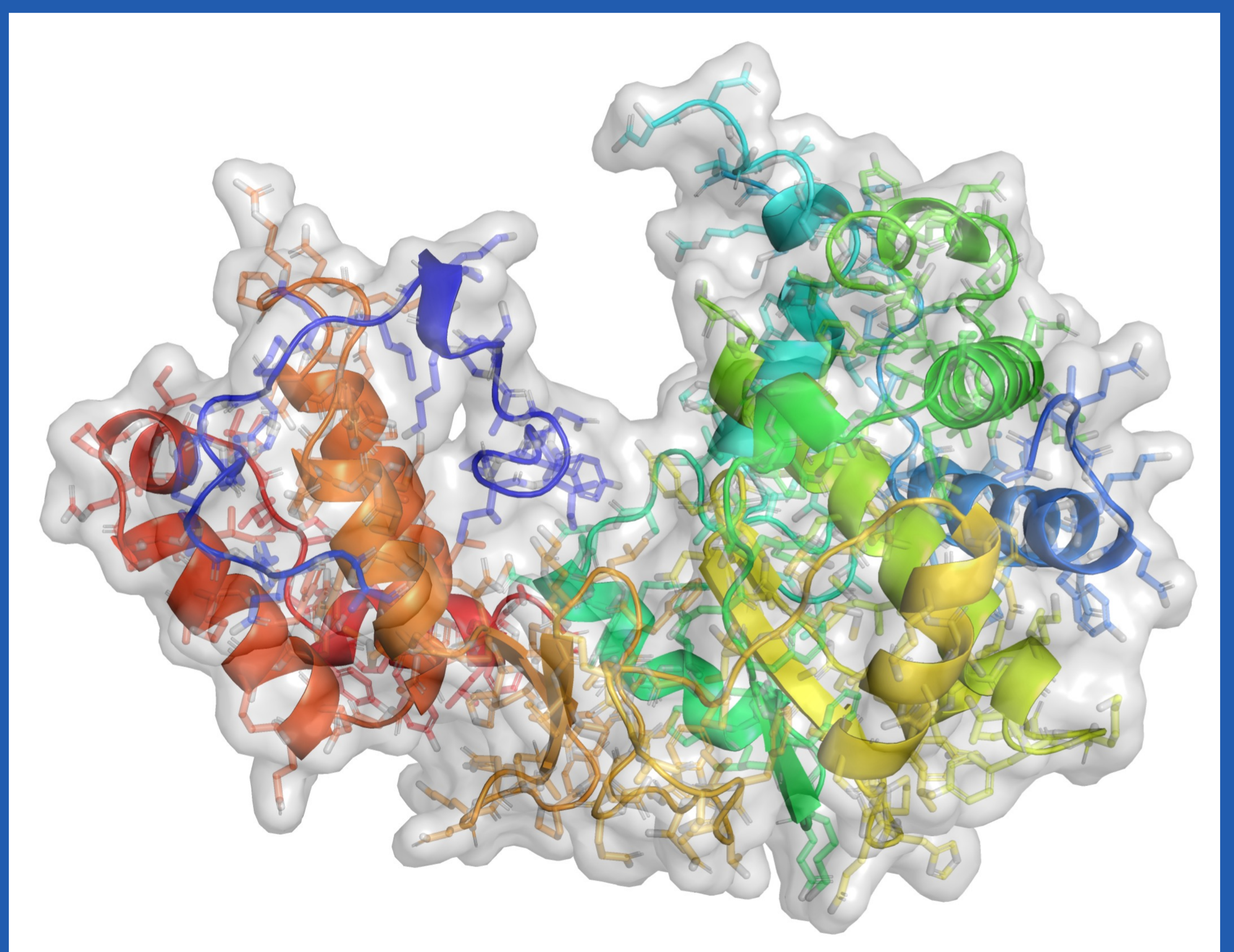


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Dr. Schnettler will conduct his research in the Department of Biosystems Science and Engineering (D-BSSE) in the Bioprocess Laboratory led by Prof. Sven Panke. He is grateful for this unique opportunity made possible by the NOMIS-ETH fellowship programme and is excited about joining ETH's Centre for Origin and Prevalence of Life to contribute to its mission.

David Schnettler is a (bio)chemist turned protein enthusiast. After studies at the University of Constance (Germany) and Ecole Normale Supérieure (France), he specialized on enzyme mechanisms and evolution during his PhD at the University of Cambridge (UK) where he used droplet microfluidics to evolve enzymes with new functions. His doctoral and post-doctoral research has been centred around how proteins evolve to acquire new functions and how this process can be steered to discover new biocatalysts. Now, he will apply the tools of protein engineering to questions at the origin of life and aims to experimentally recapitulate the prebiotic emergence of a minimalist 'proto-polymerase'.

"I am fascinated by proteins and their elegance!" Dr. Schnettler explains. "Take a look at the most essential enzymes of life, the ribosome and polymerases: The enzymes in charge of the most basic life processes (like copying DNA) are the most complicated – they are large, intricate molecular machines of seemingly irreducible complexity. Yet, life is unthinkable without heredity and growth, and the biochemistry underlying these processes is deeply conserved among all life on Earth. So how did it all start? Can we simplify these enzymes?"



Even the simplest contemporary polymerases are very complex molecules. How did they emerge? Can we simplify them? (Structure of poliovirus RNA polymerase, PDB ID: 1RDR)