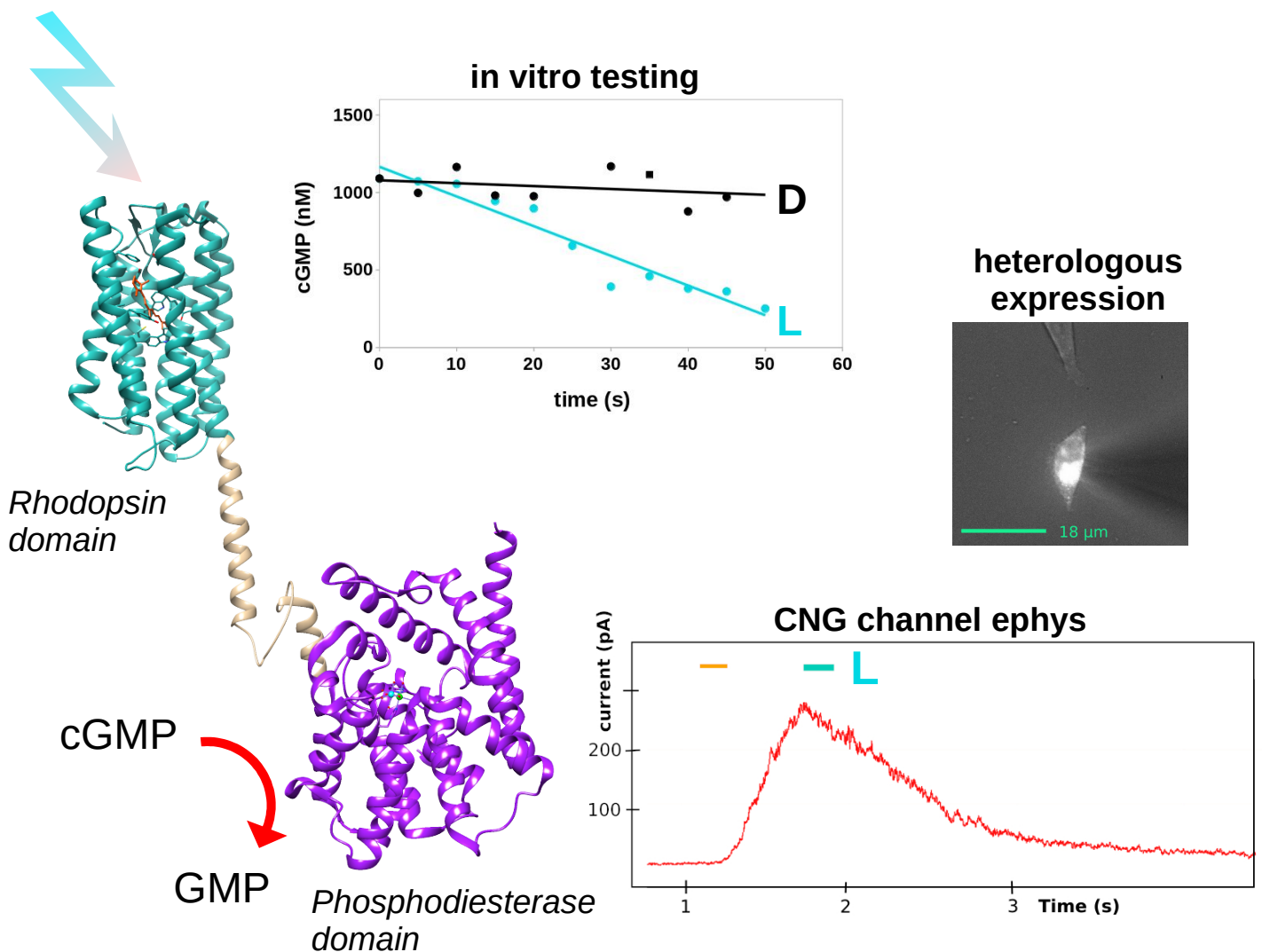


Rhodopsin phosphodiesterases - novel light-activated catalysts with high affinity

Nicolas Liem – WS19 batch –
Supervisors: Peter Hegemann (HU Berlin), Peter Hildebrandt (TU Berlin)



Cyclic nucleotides are universal second messengers. Their levels are balanced by two enzymes, cyclases and phosphodiesterases, respectively. In the choanoflagellate *C. flexa*, four putative, light-dependent Rhodopsin phosphodiesterases were found. In my research, I am expressing and testing them in different contexts. So far, one candidate enzyme was able to regulate downstream signalling pathways, i.e., cyclic nucleotide gated ion channels (CNG channels). This allows to use electrophysiology for further characterization.

The future work focuses on engineering this particular enzyme, and aims to understand the photobiophysics governing its function.