



Centre for Cryo-electron  
Microscopy of Membrane Proteins

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## Assistant Prof. Kliment Verba

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Kliment Verba is an assistant professor at the University of California San Francisco. He obtained his PhD in Dr. David Agard's laboratory working on cryo-EM studies of kinase-chaperone protein complexes. After his PhD he received an independent research fellowship at QBI-UCSF starting his own lab with the focus on structural studies of near membrane kinase signaling. His recent work helped uncover principles of asymmetric regulation in EGFR family receptors and also how such signaling propagates

downstream through cytosolic protein complexes. During the pandemic Dr. Verba helped organize a large volunteer effort focused on structural studies of SARS-CoV-2 host-viral protein complexes providing structural snapshots of a number of these potentially druggable complexes. Lastly, he has contributed to novel method developments in cryo-EM data collection and processing.



## Using the power of cryo-EM to uncover principles of kinase signaling at the membrane

Protein kinases are tasked with one of the most fundamental cellular processes: read in extracellular signals, integrate these with internal cell states and ultimately take life or death cell decisions. On the molecular level this is accomplished through dynamic protein kinase complex rearrangement which is correlated with changes in phosphorylation, all initiated by changes in oligomerization and conformation of receptor tyrosine kinases. Holistic structural view of this intricate protein dance happening at the cell membrane is just starting to come to view with the power of cryo-EM. Kliment will talk about the recent progress on structural studies of Her2/Her3 complex focusing on the special grid substrates and sample optimization which were essential for obtaining high quality structure.