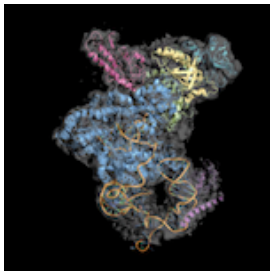

Contribution ID: **13** Type: **not specified**

Keynote 4 - CryoEM and Xray crystallography to understand structure dynamics in TRP channels

Tuesday 20 November 2018 09:00 (40 minutes)

Transient Receptor Potential (TRP) ion channels are non-selective cation channels sharing the membrane topology of six transmembrane helices but varying in sensory N- and C-terminal domains. This variation in cytosolic domains is responsible for the wide range of cellular and environmental signals sensed and transduced by TRP channels. The mechanism how these various extracellular and intracellular stimuli can activate TRP channels is one of the emerging questions in the field. The molecular understanding of TRP channels has been boosted tremendously by cryo-EM single-particle analysis. On the other hand, obtaining well-diffracting crystals of the full-length TRP channels proved to be extremely challenging, nevertheless a few X-ray structures are available. NMR and X-ray studies were rather carried out on stable regions within cytosolic domains of TRP channels, which have been structurally investigated without the membrane part. Combining these results obtained from different structural biology methods gave important mechanistic insights, e.g., into gating, ion permeation and selectivity, as well as into the activation of this enigmatic and medically important membrane protein family.

Presenter: Prof. ZIEGLER, Christine (Universiät Regensburg, Germany)