

As a program member of the Collaborative Research Centre 1080 I am aiming to understand how neuron excitability is regulated. Specifically, I am interested in the processes of calcium mediated presynaptic homeostatic plasticity (PHP) at the *Drosophila* NMJ, an established model for glutamatergic synapse function. Here homeostatic plasticity counteracts destabilizing perturbations and stabilizes synaptic transmission in order to allow for dynamic regulation while maintaining a stable baseline. Combining *Drosophila* genetics, electrophysiology, and imaging techniques I focus on the functional interplay of different voltage gated calcium channels and the membrane bound calcium ATPase PMCA with additional key players in endoplasmic reticulum (ER) calcium signaling and the regulation of plasma membrane ER interactions.