

# ***Colloquia in Membrane Transport***

Venue: Medical University Vienna, Center for Physiology and Pharmacology,  
Institute of Pharmacology, Waehringerstrasse 13a, 1090 Vienna,  
"Leseraum".

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Friday      12.12.2014 14:00 s.t.      **Petra Schwille** (host: G. Schütz)  
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## ***"Membrane models to investigate lipid-dependent protein dynamics"***

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Abstract: A notorious dilemma of biophysical methods is that the precision with which they can capture and analyse processes in biological systems is constantly increasing, but at the same time, the reproducibility and predictability of measurements taken in living systems worsens – due to the inherently stochastic nature of living systems on the molecular level. One obvious solution is to reconstitute biological processes of interest in simplified and better controllable cell-free environments, but whether the insights obtained there also apply under physiological conditions has to be constantly scrutinized. In the last decade, supported membranes and synthetic Giant Vesicles (GUVs) have become invaluable tools in studying the influence of the membrane environment, in particular of lipid-dependent domain formation, on the function of membrane proteins. In my talk, I will discuss the current state of the art in model membrane design for single-molecule based biophysics, and highlight the pros and cons of different systems of relevance for molecular membrane biology. I will give examples of reconstituted protein self-organization on membranes in cell free systems and its dependence on membrane composition and topology.