

SFB  
1078



Protonation Dynamics  
in Protein Function

## ➤ Colloquium

Mon, Oct. 21, 2013 ▪ 14:30 – 16:30 ▪ Lecture Hall B of the Physics Dept.  
at Freie Universität Berlin (Arnimallee 14, 14195 Berlin-Dahlem)

**14:30 Prof. Bert de Groot**, Max Planck Institute for Biophysical Chemistry,  
Göttingen, Germany

***Dynamics of permeation, inhibition and gating of ion and water channels***

Can we design specific membrane channel inhibitors? What is the antimicrobial mechanism of the human antibiotic dermcidin? What are the molecular determinants of channel permeation and gating? These are some of the questions that are addressed at the atomic level by molecular dynamics simulations.

15:20 Coffee break

**15:40 Prof. Lukas Tamm**, University of Virginia, Charlottesville, USA

***Structure, Folding, and Function of  $\beta$ -Barrel Membrane Proteins***

The lab of L. Tamm has pioneered solution NMR to study structures and dynamics of a range of membrane proteins. For many years, they have also been at the forefront of studies of membrane protein folding. L. Tamm will give an overview of recent studies on (i) the role of tryptophans in the folding of the small outer membrane protein OmpA of *E. coli*, (ii) thermodynamic double mutant cycle analysis of the gating of the OmpA ion channel, (iii) NMR ensemble analysis of the large pH gated *E. coli* porin OmpG, (iv) new structures of two outer membrane proteins from *Pseudomonas aeruginosa*, and (v) ideas to combat antibiotic resistance of *Ps. aeruginosa* infections, which are the major cause of death in cystic fibrosis patients.

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