Recruiting Mini-symposium on Metabolism  
room AI 1 153, EPFL, Lausanne, Switzerland, December 14, 2017

Speaker: Dr. Nora Vögtle, University of Freiburg (D)

Title: Integrative Approaches to Decipher Novel Roles of the Mitochondrial Presequence Processing Machinery in Health and Disease

Abstract:

The mitochondrial presequence processing machinery plays an essential role in mitochondrial protein biogenesis and proteostasis: its proteolytic components cleave N-terminal targeting peptides for protein maturation, remove destabilizing residues to increase the protein’s half-life and degrade toxic cleaved presequences. As 70% of all mitochondrial proteins are clients of this machinery dysfunctions result in an imbalanced mitochondrial proteome and mutations have been linked to neurodegeneration and cardiomyopathy. We have identified novel components and functions of the presequence processing machinery and pathophysiological mechanisms that link it to Alzheimer’s disease. For our studies we are using yeast as a model for detailed mechanistic analysis of these highly conserved processes as well as tissue culture and patient samples to investigate the impact of disease-related mutations on mitochondrial function and metabolism in human cells.