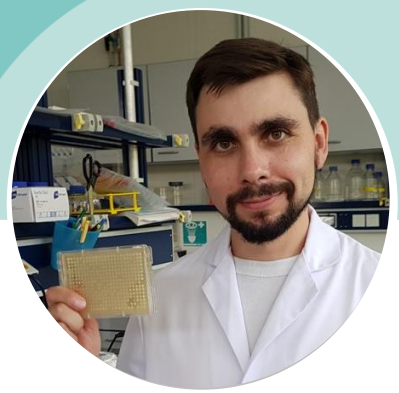

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MPI-NAT SEMINAR SERIES

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RPTU Kaiserslautern

Investigating Mitochondrial Protein Import With High-Throughput Yeast Genetics

Most of mitochondrial proteins are synthesized in the cytosol and imported into the organelle by dedicated translocases. To be recognized for import, the proteins contain targeting signals within their amino acid sequence. The mechanism of the targeting signal recognition and protein translocation is well understood in vitro for a small subset of model proteins. It remains to be determined how the translocation pathways work in living cells. First, it remains unknown what is the full diversity of proteins that are imported and how error-prone is signal recognition. To understand this, we use high-throughput yeast genetics and fluorescence microscopy to measure the fraction of each protein that translocates to the mitochondrial matrix. This allowed us to identify multiple dual-localized proteins and visualize membrane protein sorting. Second, it is not clear how protein synthesis in the cytosol is coupled to protein import process. We address this question by investigating the time proteins spend in the cytosol and interactions of ribosomes with mitochondrial outer membrane using proximity labeling and yeast genetics.

Wednesday, 11.12.2024, 1:00 pm

Host: Oleksiy Kovtun

Manfred Eigen Lecture Hall
Fassberg Campus

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