

KOLLOQUIUM

Institut für Molekulare
Biowissenschaften
Sommersemester 2024



Science in progress

Tuesday, July 9th, 2024, 12:00, Biocentre, lecture hall

Jennifer Roth and Max Angstenberger

Max Angstenberger

Genome Editing in *Chlamydomonas reinhardtii*

Being fundamental to investigate the molecular function as well as the physiological mechanisms of specific proteins, manipulation of the nuclear genome of unicellular microalgae such as *Chlamydomonas reinhardtii* via Genome Editing has become indispensable. However, precise and efficient Genome Editing approaches need to overcome several technical and importantly biological obstacles in order to avoid endless screening of mutants, and to develop reliable techniques to become routine approaches. In order to do so, exploiting CRISPR/Cas9 based approaches in combination with Homologous Recombination (HR) for nuclear manipulation and the coupling to photosynthetic phenotypes enabled the establishment of precise and efficient strategies. Moreover, new insights into mechanisms of photosynthesis in *Chlamydomonas reinhardtii* could be obtained, extending our knowledge of light-to-energy conversion as well as photoprotective mechanisms and is further enabling the investigation of highly efficient microalgal strains as potential platforms for biotechnological applications.

Science in progress represents talks of institute members. Either post docs or advanced PhD students present and discuss their recent data.

