



ORAL_COMMUNICATIONS



MEWpy: Modelled by Man, designed by Nature

Vítor Pereira

Centro de Engenharia Biológica, Departamento de Informática, Universidade do Minho

Finding genetic modifications to build biofactories, analysing microbial communities and host- pathogen interactions, or studying the evolution of cross-feeding interactions between organisms continues to be significant Systems Biology challenges. Beyond understanding the inter and intracellular interactions, identifying optimised genetic modifications or communities compositions can open the door to new environmental-friendly solutions and disruptive disease therapeutics. We have been combining constraint-based modelling formulations with artificial intelligence for years. Interestingly, bio-inspired optimisation procedures have been successfully applied to bioinformatics problems, showcasing that Nature offers the means, the inspiration and the solutions. MEWpy follows such a path and provides tools to design new strains, optimise microbial communities and integrate omics data, while SDDDB makes strain designs available to the community.

