

Invited lecture:

Remodeling of peroxisome function in the free-living euglenozoa *Diplonema papillatum* predated the transition to parasitism

By : Dr. Jorge Morales

(Heinrich Heine Uni., Düsseldorf, Germany)

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**Room: Institute of Parasitology,
Boardroom**

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You're welcome!

Glycosomes are specialized forms of peroxisomes that contain the first 7 out of 10 enzymatic steps of glycolysis with full glycolytic functionality that have been found only in kinetoplastids like *Trypanosoma* and *Leishmania*, where they are thought to underpin the metabolic adaptability of these major human pathogens. To date, it still remains unknown how the compartmentalization of the glycolytic enzymes into the peroxisomes might have taken place without breaking the tightly coordinated enzymatic cascade. In this talk, I will present evidence that relocation of glycolytic enzymes guided by peroxisomal targeting signals is also a feature of *Diplonema papillatum*, a free-living member of the sister group of kinetoplastids, but the resulting peroxisomes perform mainly gluconeogenesis while glycolysis is impaired in these protists. Furthermore, it is revealed that re-targeting of the bulk of the glycolytic enzymes used by kinetoplastid glycosomes predated and perhaps facilitated the transition to parasitism in the group of euglenozoans.

