

*Master Thesis Offer at Institute of Biology, Humboldt University of Berlin*

## **Characterization of cGMP signaling in *Toxoplasma gondii***

We are looking for a highly motivated student, who has a deep interest in molecular parasitology. In our group we are studying the obligate intracellular parasite *Toxoplasma gondii*, one of the most abundant eukaryotic pathogens of warm-blooded organisms, which causes life-threatening diseases in immunocompromised individuals. Cyclic nucleotides (cAMP/cGMP) are well known to regulate gene expression and development in many organisms including microbial pathogens. Especially, cGMP signaling has been implicated in parasite-specific processes such as gliding motility, host-cell invasion and egress, which contribute to the parasite virulence. We are currently working on cGMP signaling in *T. gondii*. Only one guanylate cyclase (GC) and corresponding cGMP-dependent protein kinase (PKG) are encoded in *T. gondii* genome to execute cGMP-regulated functions.

The main focus of the proposed master thesis will be determination of functional and physiological importance of native cGMP signaling mediators in *T. gondii*. The student will characterize PKG protein and its possible effects on the growth and the virulence of the parasite. The student will gain experience in cell culture, genetic manipulation, parasite phenotyping and bioinformatics methods. The work will be performed in the research group of Dr. Nishith Gupta. For additional information about our ongoing research and laboratory, please refer to

<https://www.biologie.hu-berlin.de/de/gruppenseiten/molpara/gruppenseiten-en/molpara-en/research/metabolism>

If interested, please send a cover letter along with your CV to:

[oezlem.guenay-esiyok@hu-berlin.de](mailto:oezlem.guenay-esiyok@hu-berlin.de)