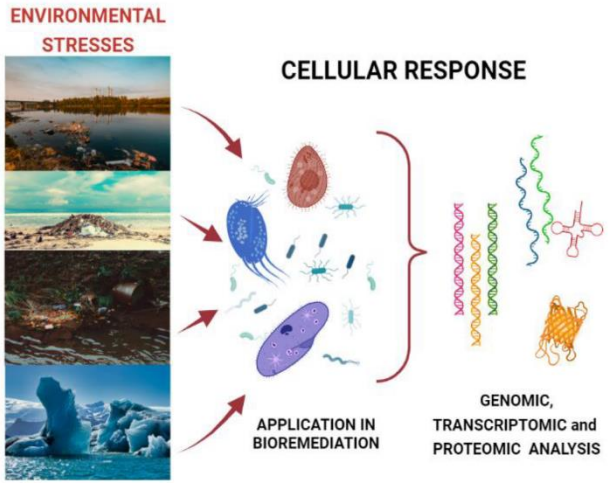
Symposium 4

Protists as model organisms to face environmental problems

Organizers: Cristina Miceli (Italy) and Wei Miao (China)

Synopsis: Despite general progress in environmental research, the impact of environmental changes on living organisms and human health remains deeply worrying. Monitoring of water contamination, air pollution, exposure to metals and global climate change can be faced with the contribution of modern omics techniques applied to key model organisms/systems. Genomics and transcriptomics are used to identify marker-genes involved in environmental responses, to analyze differential gene expression under environmental stress, to study the relationship between genotype and phenotype, including possible epigenetic control.



Response to stresses and environmental changes is a relevant issue to which protists can provide a strong contribution, due to their wide distribution in many different environmental conditions. The proposed workshop is planned with the ambition to gain insight into practical environmental problems using protists model organisms. This means that the focus will include applications of genetics/genomics/transcriptomics to contribute to deliver solutions to relevant environmental issues.

We expect to open a discussion about applications to identify new marker-genes, to better understand the adaptation to environmental changes, and to use quantitative genetics and RNAseq to measure cell response to different toxicants and environmental contaminants. The progress in technologies is producing new environmental contaminants for which the effect is so far underestimated. Just to provide a simple example, the effect of metals has been largely investigated. However, the effect on biological processes produced by aggregation of metals in nanoparticles appears a more relevant issue to be unraveled. Therefore, it is useful to discuss new practical approaches in a large audience, where the knowledge and the best practices will be shared.

Speakers:
Jun Yang (China), Thorsten Stoeck (Germany), Sandra Pucciarelli (Italy), and Jiawei Tu (China)