IRSAE Summer School

Integrating ‘Omics’ Technologies into Aquatic Ecology

New perspectives in Metagenomic, Metabolomic and Bioinformatic applications in the study of aquatic ecosystems

When
26–30 June 2017 (deadline for registration, 4th June)

Where
S. Michele all’Adige, Fondazione Edmund Mach, Istituto Agrario di S. Michele all’Adige (FEM), Trento, Italy

Local responsibilities for the course: Nico Salmaso (FEM, Hydrobiology; nico.salmaso@fmach.it), Claudio Donati (Computational Biology; claudio.donati@fmach.it)

Description of the Course

The course is aimed to provide both the theoretical foundations and examples of applications of the “Omics” in aquatic ecology, with a focus on the genetic analysis of genomes (metagenomics), proteins and metabolites (proteomics, metabolomics) in biological and environmental aquatic samples. These topics are relevant not only for the advancement of freshwater ecology, but also for the monitoring and management of water resources and the associated biological communities.

Specific fields of application of the ‘Omics’ approaches in aquatic ecology include, among the others, the quantitative evaluation and functions of biodiversity in aquatic ecosystems; the impact of climate change, anthropogenic stressors, and pollutants; the introduction and early detection of alien species; and production of cyanotoxins by cyanobacteria. Introductory lectures will be followed by the presentation and critical discussion of case studies, and by the organization of practical laboratory sessions (including bioinformatic pipelines, and guided practice in the laboratories of genomics and metabolomics at FEM and University of Trento).

The course will be completed by a mid-course field excursion with sampling (Lake Garda or a mountain lake).

Participants are requested to bring their laptop with them.

Lecturers (provisional list):
Davide Albanese (FEM, Computational Biology), Leonardo Cerasino (FEM, Hydrobiology), Claudio Donati (FEM, Computational Biology), Graziano Guella (University of Trento, C3A, Centro Agricoltura, Alimenti, Ambiente); Massimo Pindo (FEM, Genomics Platform), Nico Salmaso (FEM, Hydrobiology); Nicola Segata (University of Trento, CIBIO - Centre for Integrative Biology); Dino Zardi (University of Trento, Dipartimento di Ingegneria Civile e Ambientale); other speakers will be announced from NINA-Lillehammer (Norway), FEM, and other European Institutions.

For updates on the program of the course and details on registration, please visit the website:
http://eventi.fmach.it/IRSAE-summer-school