**1st International Workshop on Metabarcoding and Metagenome Analysis**

15-17 December 2020

Jointly organized by

DAFNAE, University of Padova, Italy and IBAB Bio-IT Centre, Bengaluru, India

“No organism is an Island”

Every living organism or any putative ecosystem is steered by a diverse array of organisms such as Bacteria, Virus, Archaea, fungi, and lower eukaryotes. Amongst these, microbes (Bacteria, Virus, and Archaea) are the most abundant, widespread, and longest-evolving forms of life on the planet and cumulatively they make the foundation of our biosphere. Studying the biology of any organism or ecosystem will remain inadequate without a proper understanding of its microbial profile and associated host-microbe interactions. This branch of computational biology is known as metagenomics and it is one of the emerging fields in biological research. This workshop will be focused on estimating this microbial diversity in diverse habitats such as the human gut, soil, plants, marine/freshwater, etc., and associated challenges in this field.

The University of Padova, Italy, and the Bio-IT Centre, IBAB, Bengaluru are coming together to organize a three-day online hands-on workshop on Metagenome analysis from 15-17 December 2020. This workshop will introduce the participants to basic bioinformatics skills, basic concepts of metagenomics, describe the techniques to decipher the microbial community, and showcase various applications via talks from experts. We will provide hands-on training in the UNIX command line, QIIME pipeline to decipher microbial composition (including alpha and beta diversities), and whole metagenome sequencing using real data.

Target Audience: The course is aimed at students, researchers, and technicians who wish to employ bioinformatics approaches to study microbial composition but may not have sufficient training in/awareness in this emerging area of research. Ph.D. scholars/ postdoctoral fellows/ research fellows/ faculty involved in pure experimental biological research are especially encouraged to apply. However, the course will also be beneficial to those pursuing a Master’s in Biotechnology/ Life Sciences/ Microbiology. Teachers from undergraduate and postgraduate teaching institutions and research institutes across the state of Karnataka are also encouraged to apply.

Forty candidates will be selected for this workshop on a first-come basis.

**List of organizers (list in alphabetical order)**

• Prof. Claudio Bonghi, University of Padova, Italy

• Prof. Giuseppe Concheri, University of Padova, Italy

• Dr. Saptarathi Deb, University of Padova, Italy

• Prof. Serenella Nardi, University of Padova, Italy

• Dr. Samathmika Ravi, University of Padova, Italy

• Prof. Giancarlo Renella, University of Padova, Italy

• Prof. Stefano Schiavon, University of Padova, Italy

• Prof. Andrea Squartini, University of Padova, Italy

• Prof. Subhashini Srinivasan, IBAB, Bengaluru, India

• Prof. Piergiorgio Stevanato, University of Padova, Italy

• Prof. Angela Trocino, University of Padova, Italy

**List of Speakers (list in alphabetical order)**

• Dr. Bibha Choudhary, IBAB, Bengaluru, India

• Dr. Gaurav Sharma, IBAB, Bengaluru, India

• Prof. Andrea Squartini, University of Padova, Italy

• Dr. Subhashini Srinivasan, IBAB, Bengaluru, India

• Prof. Piergiorgio Stevanato, University of Padova, Italy

• Dr. Shivakumar Swamy, IBAB, Bengaluru, India

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| Registration Fee Structure: | |  |
| Category | Indian | International |
| Masters/ Ph.D. students | Rs. 3,000 | 50 Euro |
| Postdoctoral fellows, Faculty, and Lecturers | Rs. 6,000 | 100 Euro |
| Industrial applicants | Rs.10,000 | 150 Euro |

**Registration Procedure**

Interested participants should register for this workshop by filling up the suggested google form. You will be asked to upload your resume, along with a recent photo, and a write-up (minimum 100 words) on how this workshop will be useful for your research and/or career development. After filling the google form, you will receive information on how to pay the registration fee. Once Forty seats are filled, the registration will be closed.

**Registration Link: https://forms.gle/CSXgpgGh22ZafZkb9**

**Registration deadline: 8 December 2020**

**Venue**

This is an online workshop, so lectures and hands-on training will be conducted virtually. Therefore, all participants are required to have access to a personal computer and a good internet connection.

**About DAFNAE**

The Department of Agronomy Food Natural resources Animals and Environment (DAFNAE) was founded in 2012 by the fusion of teachers and administrative staff of the Departments of Environmental Agronomy and Crop Production, Agricultural Biotechnology, and Animal Science. The "mission" of the Department is to promote the quality of human life, the competitiveness of the agri-food sector, and the sustainable use of natural resources, biotic and abiotic, through the production and dissemination of knowledge on the management and improvement of plants, animals, soil, and microorganisms for the production of quality food and biomass, ensuring the conservation of ecological systems, the protection of cultivated plants and enhancing the environment and biodiversity. Assuming that in the agro-food industry the close connections between the environment, crop and animal production, biomass, and food require an integrated and interdisciplinary approach, vision, and methods, the Department DAFNAE develop excellent research and teaching in the fields of science and technology plant, animal and microbial soil, cultivation techniques and livestock, the environmental sustainability of agro-livestock and food biotechnology in agriculture and food and the environment, the preservation and enhancement of environmental resources and biodiversity, the properties technological products, and the evaluation and enhancement of the quality of the food. The main novelty in the cultural project of the department is to study the environmental and agri-food sector with a comprehensive approach, to consider and exploit the interconnections that exist within individual sectors and between different production chains. In particular, we are grouped in a logical system of scientific expertise, teaching, and administration in the fields of knowledge and the production of vegetable and animal raw materials, the quality of agriculture and forestry, including meadows and lawns, the study of components biocenotic plant and animal production, processing, and exploitation of food and non-food products and services, using advanced methods of research, including biotechnology.

**About Ph.D. Course in Animal and Food Science (DAFNAE)**

The Ph.D. course in ANIMAL and FOOD SCIENCE is offered by the University of Padova within the Veneto region, well known for its animal farms and productions and its food industry, which provide high quality and high priced Italian foods and wines. It offers excellent working conditions in a challenging environment for talented researchers who strive for international collaborations in one of the best academic research institutions in Italy. Due to its interdisciplinary core, the Ph.D. course offers research projects in the fields of animal sciences and technologies, agricultural chemistry and genetics, food sciences and technologies, and agricultural microbiology. All Ph.D. activities are strongly connected by common educational programs and integrated research actions. Strong cooperation with several universities across the world, Italian and European organizations of producers, private companies, and public institutions allow joint research activities and internships in the frame of national and international projects. Internships abroad are mandatory. For more information, please visit https://www.phdanimalfoodscience.org.

**About Ph.D. Course in Crop Science (DAFNAE)**

The PhD in Crop Science has started its activity as a Doctorate School in the year 2004, resulting from the merging of three pre-existing doctoral courses (Agricultural biotechnology, Environmental Agronomy, Plant protection). The PhD course in Crop Science offers a comprehensive education with a research scale from the cell to the ecosystem, following three main approaches: agrobiotechnologies, plant-environment interaction, ecosystem management. The course provides an opportunity to work in the best academic research institution in Italy. Students choose their field of interest under the supervision of one or more professors. Courses are designed to provide advanced tools on applied biostatistic, risk and security in the research activities, scientific communication, literature research and data resources. Strong cooperation between Italian and European organizations of producers, private companies, and public institutions allow combined research activities, seminars and periods of internship. Internships abroad are highly recommended. For more information, please visit https://www.sciproveg.com.

**About Bio-IT Centre**

The Bio-IT Research and Training Centre (Bio-IT Centre) has been established at the Institute of Bioinformatics and Applied Biotechnology (IBAB) in 2010 with support from the Department of Electronics and Information Technology (DeITY), the Government of India and the Department of IT, BT and S&T, Government of Karnataka. Bio-IT Centre has a state-of-art sequencing facility with the high-throughput sequencer HiSeq 2500 and several accessory equipment such as a Hi-Scan system for Illumina bead array and microarray-based imaging, Qubit, C-bot, Covaris, Bio-analyzer and Agilent 2200 Tape-station for the processing of DNA and RNA samples, Stratagene Mx 3000 for Real-Time PCR, and 3500 Dx Genetic Analyzer for capillary electrophoresis based sequencing. Bio-IT Centre provides sequencing and/or analysis services in either collaborative or service mode. The Centre also organizes introductory and advanced workshops in Bioinformatics and NGS analysis regularly.

**About IBAB**

IBAB, located in Electronic City, Bengaluru, is a unique institution engaged in education, research, and entrepreneur-supported programs. IBAB’s mission is to catalyze the growth of the biotechnology and bioinformatics industries in India. IBAB offers a distinctive M.Sc. degree program (with dual specialization in Bioinformatics and Biotechnology), an interdisciplinary Ph.D. research program, and a Post Graduate Diploma Programme (in Big Data Biology). The institute has strong research programs in various disciplines such as Cancer Biology, Infectious Disease Biology, Synthetic Biology, Molecular Parasitology, Microbial Genomics, Structural Bioinformatics, Systems Biology, and Mathematical Biology as evident by the track record of well-trained and experienced faculties. It has excellent infrastructure and environment suitable for cutting edge research. For more information, please visit https://www.ibab.ac.in.