ICGEB Course "Plant-beneficial function prediction of *Bacillus subtilis* species through NGS technology”
November 06-13, 2022; Sfax, Tunisia

**Detailed scientific program 06-13 November 2022**

**Sunday 06th November 2022**
Participant venues

**Monday 07th November 2022**
08:30-10:30: Tagmentation of Input DNA, PCR Amplification (*Dr. Raida Zribi Zghal and Dr. Olfa Frikha Gargouri: Center of Biotechnology of Sfax*)
10:30-11:00: Workshop opening and Welcome cocktail
11:00-11:15: President of the University of Sfax
11:15-11:30: General Director of the Center of Biotechnology of Sfax: Prof. Slim Tounsi
11:30-13:15: Conference (*Prof. Vittorio Venturi: International Centre for Genetic Engineering and Biotechnology, Trieste, Italy*)
13:15-14:15: Lunch
14:15-17:30: PCR Clean up and library normalization (*Dr. Raida Zribi Zghal and Dr. Olfa Frikha Gargouri*)

**Tuesday 08th November 2022**
08:30-10:30: Library pooling for MiSeq Sequencing (*Dr. Raida Zribi Zghal and Dr. Olfa Frikha Gargouri*)
10:30-11:00: Coffee break
11:00-13:15: Conference (*Prof. Vittorio Venturi*)
13:15-14:15: Lunch
14:15-16:00: Introduction to UNIX and Linux, Perl Tutorial presentation (*Dr. Kais Ghedira: Pasteur Institute of Tunis, Tunisia*)
16:00-16:30: Coffee break
16:30-17:30: The NGS revolution and its impact on genomics / The evolution of *Bacillus subtilis* and other *Bacilli* on genomic perspectives (*Dr. Kais Ghedira*)

**Wednesday 09th November 2022**
08:30-09:30: Participant presentations
09:30-11:00: Conference (*Dr. Heiko Liesegang: Georg-August University Goettingen, Germany*)
11:00-11:30: Coffee break
11:30-13:15: Practical demonstration: New genome assembly (*Bacillus subtilis*) – Objective and general pipeline presentation (*Dr. Kais Ghedira*)
13:15-14:15: Lunch
14:15-16:00: Practical demonstration: New genome assembly (*Bacillus subtilis*) – Objective and general pipeline presentation (*Dr. Kais Ghedira*)
16:00-16:20: Coffee break
16:20-17:30: Practical demonstration: New genome assembly (*Bacillus Subtilis*) – Objective and general pipeline presentation (**Dr. Kais Ghedira**)

**Thursday 10th November 2022**
08:30-10:30: Conference; New genome assembly – Objective and general pipeline presentation (**Dr. Raida Zribi Zghal**)
10:30-11:00: Coffee break
11:00-13:15: Practical demonstration: New genome assembly (*Bacillus subtilis*) – NGS file format and quality control (**Dr. Heiko Liesegang**)
13:15-14:15: Lunch
14:15-16:00: Conference (**Dr. Kais Ghedira**)
16:00-16:30: Coffee break
16:30-17:30: Participant presentations.

**Friday 11th November 2022**
08:30-10:30: Plant-beneficial function prediction of *Bacillus subtilis* species (**Dr. Kais Ghedira**)
10:30-11:00: Coffee break
11:00-13:15: Practical demonstration: PCR Gaps (how to design the primers for gaps) and how to explore results, annotation and validation (**Dr. Heiko Liesegang**)
13:15-14:15: Lunch
14:15-16:00: Practical demonstration: New genome assembly (Detailed analysis of the NGS data of novel *Bacillus* strain: Genome assembly and *in silico* plasmids prediction (plasmids and Chromosome) (**Dr. Heiko Liesegang**)
16:00-16:30: Coffee break
16:30-17:30: Identification of plant-beneficial functions of *Bacillus subtilis* sequenced strains from NGS data: Secondary metabolite clusters identification (Antismash 4.0, Prism 3, Napdos, NP.Search, and Bagel3) and genome mining (**Dr. Heiko Liesegang**)

**Saturday 12th November 2022**
08:30-10:30: Identification of plant-beneficial functions of *Bacillus subtilis* sequenced strains from NGS data: Secondary metabolite clusters identification (Antismash 4.0, Prism 3, Napdos, NP.Search, and Bagel3) and genome mining (**Dr. Heiko Liesegang**)
10:30-11:00: Coffee break
11:00-13:15: Discussion and meeting closure
13:15-14:15: Lunch
14:15: Free time.

**Sunday 13th November 2022**
Departure