



Microbial Metagenomics: A 360° Approach

EMBO PRACTICAL COURSE



We have moved our website to embl.org/events. The content below is no longer being updated.

EMBL Courses and Conferences during the Coronavirus pandemic

With the onsite programme paused, many of our events are now being offered in virtual formats.

Registration is open as usual for many events, with back-up plans in place to move further courses and conferences online as necessary. Registration fees for any events affected by the COVID-19 disruption are fully refundable.

More information for participants of events at EMBL Heidelberg can be found [here](#).

Programme

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Day 1 - Monday 23 April 2018

Time	Speaker	Location
09:00 - 09:15	Welcome and EMBL Overview Elisabeth Zielonka	ATC Courtyard Room A+B

Time	Speaker	Location
09:15 - 09:30	Introduction to Training Lab and House notes Yvonne Yeboah	ATC Courtyard Room A+B
09:30 - 10:00	Welcome and Introductions José Eduardo González Pastor	ATC Courtyard Room A+B
10:00 - 11:00	Lecture: The impact of Metagenomics, on genes and genomes discovery Gabrielle Potocki -Veronese	ATC Courtyard Room A+B
11:00 - 12:00	Lecture: Metagenomics library preparation for NGS Vladimir Benes	ATC Courtyard Room A+B
12:00 - 13:00	Lunch	EMBL Canteen
13:00 - 14:30	Short talk by participants	ATC Courtyard Room A+B
14:30 - 15:30	Lecture: Metagenomics: Concepts, historical milestones and next advance José Eduardo González Pastor	ATC Courtyard Room A+B
15:30- 15:45	Coffee break	ATC Courtyard Room A+B
15:45 -16:45	Group activity: Basic concepts and background quiz Elisabeth Zielonka	ATC Courtyard Room A+B
16:45 - 18:30	Poster session	Top of Helix A
18:30 - 19:30	Dinner	EMBL Canteen

Day 2 - Tuesday 24 April 2018

Time	Speaker	Location
09:00 - 09:15	Quick overview of the day José Eduardo González Pastor	ATC Courtyard Room A+B
09:15 - 10:30	Practical: Extraction of metagenomic DNA in groups [from samples brought by the students (environmental)] José Eduardo González Pastor, Arantxa Lopez	Training Lab B

Time	Speaker	Location
10:30 - 11:00	Coffee Break	ATC Courtyard Room A+B
11:00 - 12:30	Practical: Extraction Results José Eduardo González Pastor, Arantxa Lopez	Training Lab B
12:30 - 13:30	Lunch	EMBL Canteen
13:30 - 14:30	Practical: Extraction Results (cont.) José Eduardo González Pastor, Arantxa Lopez	Training Lab B
14:30 - 15:45	Practical: Nanopore: 16S analysis/ Sample preparation and PCR set-up Dinko Pavlinic, Bianka Baying	Training Lab B
15:45 - 16:00	Coffee Break	ATC Courtyard Room A+B
16:00 - 17:30	Practical: Nanopore: 16S analysis/ DNA cleanup and Sequencing start Dinko Pavlinic, Bianka Baying	Training Lab B
17:30 - 18:30	All/Discussion Session	ATC Courtyard Room A+B
18:30 - 19:30	Dinner	EMBL Canteen
19:30 - 21:00	Poster Session	Top of Helix A

Day 3 - Wednesday 25 April 2018

Time	Speaker	Location
09:00 - 09:15	Quick overview of the day José Eduardo González Pastor	ATC Courtyard Room A+B
09:15 - 10:30	Practical: Test digestion conditions for metagenomic DNA and preparation of agarose gels José Eduardo González Pastor, Arantxa Lopez	Training Lab B
10:30 - 11:00	Coffee Break	ATC Courtyard Room A+B

Time	Speaker	Location
11:00 - 12:30	Digestion of metagenomic DNA for cloning in the libraries (once that digestion conditions are determined)	Training Lab B
12:30 - 13:30	Lunch	EMBL Canteen
13:30 - 15:00	Purification from gel of the digested metagenomic DNA	Training Lab B
15:00 - 15:30	Coffee break	ATC Courtyard Room A+B
15:30 - 19:00	Cloning of the metagenomic DNA + overnight ligation	Training Lab B
19:00 - 20:30	Dinner	EMBL Canteen

Day 4 - Thursday 26 April 2018

Time	Speaker	Location
09:00 - 09:15	Quick overview of the day José Eduardo González Pastor	ATC Courtyard Room A+B
09:15 - 11:00	Practical: Transformation in <i>E. coli</i> of the library José Eduardo González Pastor, Arantxa Lopez	Training Lab B
11:00 - 12:00	Methodological lecture and discussion session: Metagenomics experimental design: Common shortcoming and pitfalls José Eduardo González Pastor	ATC Courtyard Room A+B
12:00 - 13:00	Lunch	EMBL Canteen
13:00 - 14:00	Lecture: Sequence data "Shotgun Sequencing, and Meta[gen transcript]omics analysis Giuseppe D'Auria	ATC Courtyard Room A+B
14:00 - 15:30	Lecture: What bring metagenomic approach in cardiometabolic and nutrition-related disorders? Karine Clement	ATC Courtyard Room A+B

Time	Speaker	Location
15:45	Free evening with tour of Heidelberg	

Day 5 - Friday 27 April 2018

Time	Speaker	Location
09:00 - 09:15	Quick overview of the day Giuseppe D'Auria	Computer Training Lab
09:15 - 10:00	Practical: Analysis of some colonies from the metagenomic libraries -Interpretation of results José Eduardo González Pastor, Arantxa Lopez	Training Lab B
10:00 - 10:30	Coffee break	Computer Training Lab
10:30 - 12:30	Lecture and Hands-on/Introduction to Linux Giuseppe D'Auria	Computer Training Lab
12:30 - 13:30	Lunch	EMBL Canteen
13:30 - 14:30	Lecture: Some theory on taxonomy, phylogeny and diversity measures based on 16S rRNA gene amplicons and direct metagenomic Kostas Konstantinidis	Computer Training Lab
14:30 - 15:30	Lecture and Hands-on: Binning in Metagenomics Kostas Konstantinidis	Computer Training Lab
15:30 - 16:00	Coffee break	Computer Training Lab
16:00 - 17:00	Lecture and Hands-on: Binning in Metagenomics (cont.) Kostas Konstantinidis	Computer Training Lab
16:00 - 18:30	Hands-on: Metagenomics in silico: what can I do Giuseppe D'Auria	Computer Training Lab
18:30	Bus to ISG Hotel	
19:00 - 20:00	Dinner & drinks/ BBQ (weather permitting)	ISG Restaurant

Day 6 - Saturday 28 April 2018

Time	Speaker	Location
09:00 - 09:15	Quick overview of the day Kostas Konstantinidis	Computer Training Lab
09:15 - 11:00	Lecture: Diversity matters, a place for a classification of uncultured microorganisms in Taxonomy Kostas Konstantinidis	Computer Training Lab
11:00 - 11:15	Coffee break	Computer Training Lab
11:15 - 12:15	Hands-on: Introduction into the processing of raw data Giuseppe D'Auria	Computer Training Lab
12:15 - 13:15	Lunch	EMBL Canteen
13:15 - 14:15	Lecture and Hands-on: Upstream analysis: data organisation and standards in metagenomics Giuseppe D'Auria	Computer Training Lab
14:15 - 16:15	Lecture and Hands-on: Metagenomic assembly, ORF finding, functional annotation Giuseppe D'Auria	Computer Training Lab
16:15 - 16:45	Coffee break	Computer Training Lab
16:45 - 18:00	Minilon	Computer Training Lab
18:00 - 19:00	Group activity/ Wrap up of the day- quiz activity covering the topics taught during the previous two days (Bioinformatics)	Computer Training Lab
19:00 - 20:30	Dinner	EMBL Canteen

Day 7 - Sunday 29 April 2018

Time	Speaker	Location
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Time	Speaker	Location
09:00 - 09:15	Quick overview of the day Kristian Vlahovicek	Computer Training Lab
09:15 - 11:15	Hands-on: Introduction to R for Bioinformatics Giuseppe D'Auria	Computer Training Lab
11:15 - 11:30	Coffee break	Computer Training Lab
11:30 - 13:00	Lecture and Hands-on: Functional and taxonomic analysis with EBI Metagenomics Alex Mitchell	Computer Training Lab
13:00 - 14:00	Lunch	EMBL Canteen
14:00 - 17:00	Lecture and Hands-on: Functional and taxonomic analysis with EBI Metagenomics Alex Mitchell	Computer Training Lab
17:00 - 18:00	Lecture: Analysis Tools Overview: INCA, MILC and MELP Kristian Vlahovicek	Computer Training Lab
18:00 - 18:30	Group activity/ Wrap-up of the day + Q&A	Computer Training Lab
19:00	Course Dinner	Downtown Restaurant

Day 8 - Monday 30 April 2018

Time	Speaker	Location
09:00 - 09:15	Quick overview of the day José Eduardo González Pastor	Computer Training Lab
09:15 - 10:30	Hands-on: INCA Kristian Vlahovicek	Computer Training Lab
10:00 - 10:45	Coffee Break	Computer Training Lab
10:45 - 12:15	Hands-on/MEGAN Daniel Huson	Computer Training Lab

Time	Speaker	Location
12:15 - 13:15	Lunch	EMBL Canteen
13:15 - 14:00	Hands-on/MEGAN Daniel Huson	Computer Training Lab
14:00 - 15:00	GeneCore Tour Jan Provaznik	GeneCore
15:00 - 15:30	Coffee break	Computer Training Lab
15:30 - 17:30	Hands-on/Time to practice and Q&A	Computer Training Lab
17:30 - 18:30	Wrap-up and conclusions	Computer Training Lab
18:30 - 20:30	Course Dinner	EMBL Canteen