



Synthetic Biology in Action: Bridging Natural/Non-Natural

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 The content below is no longer being updated.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

Got something to say? Share it with [#EMBOSynBio](#)

Day 1 - Sunday 15 September 2019

Time	Speaker	Location
17:00	Bus departure to EMBL Heidelberg	Bus stop in front of ISG Hotel
17:30 - 18:00	Welcome and some practicalities by organisers	Flex Lab A & B

Time	Speaker	Location
	Inaugural Lecture #1 - Evolutionary engineering meets heterotic computi	
18:00 - 19:00	Victor de Lorenzo - National Center of Biotechnology of the Spanish Research Council, Spain	Flex Lab A & B
19:00 - 19:30	Poster hanging	Helix A
19:30	Bus departure to ISG Hotel	In front of ATC entrance
19:45	BBQ Dinner & networking	ISG Hotel

Day 2 - Monday 16 September 2019

Time	Speaker	Location
08:45	Bus departure to EMBL Heidelberg (Hoffmann Reisen)	Bus stop in front of ISG Hotel
	Overview of the experiments to be run during the course	
09:00 - 10:00	Víctor de Lorenzo - National Center of Biotechnology of the Spanish Research Council, Spain	Flex Lab A & B
	Organisation of teams, assignment of supervisors and review /schedule of duties	
	Elisabeth Zielonka - EMBL Heidelberg, Germany	
10:00 - 11:00	Separate meetings of lab teams with respective instructors	Flex Lab A & B
11:00 - 11:30	Coffee break	Flex Lab A & B
	Keynote lecture #2: Retrosynthesis and computer-aided design of metabolic pathways	
11:30 - 13:00	Jean-Loup Faulon - INRA, France	Flex Lab A & B
13:00 - 14:00	Lunch break	EMBL Canteen
14:00 - 16:00	Laboratory work	Training Lab A & B
16:00 - 16:30	Coffee break	Flex Lab A & B

16:30 - 18:00	Keynote lecture #3: Simulation, analysis, and control of biological networks Mustafa Khammash - ETH Zurich, Switzerland	Flex Lab A & B
18:00 - 19:30	Laboratory work	Training Lab A & B
19:30 - 20:30	Dinner	EMBL Canteen
20:30 - 21:30	Group activity: Poster Session & Discussion I (#1 - 7)	Top of Helix A
21:30	Bus departure to ISG Hotel	In front of ATC entrance

Day 3 - Tuesday 17 September 2019

Time	Speaker	Location
08:45	Bus departure to EMBL Heidelberg (Hoffmann Reisen)	Bus stop in front of ISG Hotel
09:00 - 11:00	Laboratory work	Training Lab A & B
11:00 - 11:30	Coffee break	Flex Lab A & B
11:30 - 13:00	Keynote Lecture #4: Reshaping photosynthesis with Cyanobacteria Devaki Bhaya - Stanford University, USA	Flex Lab A & B
13:00 - 14:00	Lunch break and Group Photo (at 14:00)	Flex Lab A & B
14:00 - 16:00	Laboratory work	Training Lab A & B
16:00 - 16:30	Coffee break	Flex Lab A & B
16:30 - 18:00	Keynote lecture #5: Folding of knotted DNA nanostructures and protein origamis Roman Jerala - National Institute of Chemistry, Slovenia	Flex Lab A & B
18:00 - 19:30	Laboratory work	Training Lab A & B
19:30 - 20:30	Dinner	EMBL Canteen

20:30 - 21:30	Group activity: Poster Session & Discussion II (#8 - 14)	Top of Helix A
21:30	Bus departure to ISG Hotel (Hoffmann Reisen)	EMBL bus stop

Day 4 - Wednesday 18 September 2019

Time	Speaker	Location
08:45	Bus departure to EMBL Heidelberg (Hoffmann Reisen)	Bus stop in front of ISG Hotel
09:00 - 11:00	Laboratory work	Training Lab A & B
11:00 - 11:30	Coffee break	Flex Lab A & B
11:30 - 13:00	Keynote lecture #6: Designing vesicles and tubules for building synthetic cells Petra Dittrich - ETH Zurich, Switzerland	Flex Lab A & B
13:00 - 14:00	Lunch break	EMBL Canteen
14:00 - 16:00	Laboratory work	Training Lab A & B
16:00 - 16:30	Coffee break	Flex Lab A & B
16:30 - 18:00	Keynote lecture #7: The Biological Upcycling of Metals Louise Horsfall - University of Edinburgh, UK	Flex Lab A & B
18:00 - 19:30	Laboratory work	Training Lab A & B
19:30 - 20:30	Tapas Dinner	Rooftop Lounge
20:30 - 21:30	Group activity: Poster Session & Discussion III (#15 - 20)	Top of Helix A
21:30	Bus departure to ISG Hotel	In front of ATC entrance

Day 5 - Thursday 19 September 2019

Time	Speaker	Location
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08:45	Bus departure to EMBL Heidelberg	Bus stop in front of ISG Hotel
09:00 - 11:00	Laboratory work	Training Lab A & B
11:00 - 11:30	Coffee break	Flex Lab A & B
11:30 - 13:00	Keynote Lecture #8: Micro-scale processes for production of value-added molecules Sven Panke - ETH Zurich, Switzerland	Flex Lab A & B
13:00 - 14:00	Lunch break	EMBL Canteen
14:00 - 16:00	Laboratory work	Training Lab A & B
16:00 - 16:30	Coffee break	Flex Lab A & B
16:30 - 18:00	Keynote Lecture #9: Engineering advanced materials from living bacteria Tom Ellis - Imperial College London, UK	Flex Lab A & B
18:00 - 19:30	Laboratory work	Training Lab A & B
19:30	Bus departure (Hoffmann Reisen)	EMBL bus stop
20:00	Dinner in Heidelberg	

Day 6 - Friday 20 September 2019

Time	Speaker	Location
08:45	Bus departure to EMBL Heidelberg	Bus stop in front of ISG Hotel
09:00 - 11:00	Laboratory work	Training Lab A & B
11:00 - 11:30	Coffee break	Flex Lab A & B
11:30 - 13:00	Keynote Lecture #8: Interfacing biological and non-biological systems Marileen Dogterom - Delft University of Technology, The Netherlands	Flex Lab A & B
13:00 - 14:00	Lunch break	Flex Lab A & B

14:00 - 16:00	Laboratory work	Training Lab A & B
16.00 - 16.30	Coffee break	Flex Lab A & B
16:30 - 18:00	Keynote Lecture #9: Design principles for the production of unnatural organic compounds Kristala L. Jones Prather - Massachusetts Institute of Technology, USA	Flex Lab A & B
18:00 - 19:30	Laboratory work	Training Lab A & B
19:30 - 21:00	Group Activity: Pizza Dinner with viewing and discussion of ELSI movie clips	Rooftop Lounge
21:00	Bus departure to ISG Hotel	In front of ATC entrance

Day 7 - Saturday 21 September 2019

Time	Speaker	Location
08:45	Bus departure to EMBL Heidelberg	Bus stop in front of ISG Hotel
09:00 - 11:00	Laboratory work	Training Lab A & B
11:00 - 11:30	Coffee break	Flex Lab A & B
11:30 - 13:00	Keynote Lecture #12: Beyond familiar biochemistry: Synthetic Biology for organic chemistry Birgit Wiltschi - Austrian Centre of Industrial Biotechnology – acib GmbH, Austria	Flex Lab A & B
13:00 - 14:00	Lunch break	EMBL Canteen
14:00 - 15:30	Keynote lecture #13: Rethinking and refactoring the RNA world in bacteria Cecilia Arraiano - Universidade Nova de Lisboa, Portugal	Flex Lab A & B
15:30 - 17:00	Preparation of final reports by individual teams	Flex Lab A & B
17:00	Bus departure to ISG Hotel (Hoffmann Reisen)	EMBL bus stop

17:30	Bus departure to Neckarmünzplatz (Hoffmann Reisen)	Bus stop in front of ISG Hotel
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Day 8 - Sunday 22 September 2019

Time	Speaker	Location
08:45	Bus departure to EMBL Heidelberg	Bus stop in front of ISG Hotel
09:00 - 11:00	Presentation of results by individual teams	Flex Lab A & B
11:00 - 11:30	Coffee break	Flex Lab A & B
11:30 - 13:00	Closing Lecture #14: Interrogation, recording, and programming cellular phenotypes with CRISPR technologies Randall Platt - ETH Zurich, Switzerland	Flex Lab A & B
13:00 - 13:15	Wrap-up and Farewell	Flex Lab A & B
13:15	Packed lunch and departure to ISG Hotel, Hauptbahnhof, Crowne Plaza (Hoffmann Reisen)	EMBL bus stop