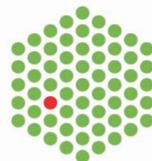


**nature**  
[ **inside**view ]

EMBL



Profile Feature as seen in *Nature* 19 December 2019

# FOCUS ON INTERDISCIPLINARY SKILLS AT EMBL

A conversation with **DR JÜRGEN DEKA**, Head of External Scientific Training at the European Molecular Biology Laboratory (EMBL)



The EMBL Course and Conference Programme is the product of more than 40 years of excellence in scientific research and training at the European Molecular Biology Laboratory (EMBL). Every year, as many as 8,000 researchers attend courses and conferences at EMBL's six sites across Europe, to develop their skills in the life sciences. Topics range from developmental and cell biology, to structural biology and bioinformatics. Jürgen Deka is the Head of External Scientific Training at EMBL and his team is responsible for delivering the Course and Conference Programme.

## What are the main goals of the EMBL Course and Conference Programme?

We offer an exciting and diverse range of courses and conferences covering pioneering research and the development of valuable skills for the life sciences. Our courses and conferences are open to all researchers, particularly those at an early career stage. We aim to share the very best of EMBL with the research community, and to stimulate new science by bringing researchers together from a broad range of disciplines.

## What is special about your programme?

Our programme is largely based on the research of EMBL scientists, making it unique. We offer training on topics like neuroepigenetics, the epitranscriptome or non-neuronal optogenetics. On the organisational level we emphasize 1:1 discussions and close interactions between participants and speakers or instructors. We use an array of networking tools like meet-the-speaker sessions, speed networking, or pre-conference meetings for PhD students and postdocs. We highly value face-to-face training. Our courses and conferences are led by the best scientists and technology specialists working in each subject, including several Nobel laureates. We run events seamlessly, with every detail

arranged, so that our participants can focus on their learning and engage with subject experts. In addition, we meet practical needs via offerings such as on-site childcare, a meditation room, and delicious locally sourced food.

## How accessible is your programme?

Our training is open to all. We have a wide range of funding options for our participants and work closely with external funding bodies to facilitate this. We offer subsidised childcare at most of our conferences, and we cover travel costs and waive registration fees for approximately 450 attendees every year. This opens up our programme to researchers from across the globe. In tandem with our on-site programme, we offer webinars and online training modules, allowing scientists to learn from wherever they are in the world. In 2018 we introduced remote access to some courses using avatar robots, which allows home-based researchers to interact with everyone on the course.

## Which key scientific skills will your 2020 courses focus on?

Many recent breakthroughs have resulted from interdisciplinary projects, so we try to support our participants in building collaboration skills. Some of our 2020 courses will bring together diverse groups of researchers — an illustrative

## NETWORKING IS THE PIVOT AROUND WHICH OUR PROGRAMME REVOLVES.

example is our new workshop 'Design thinking: approaches for chronic disease management', where molecular biologists will work with graduates in business and law to develop interdisciplinary solutions for long-term healthcare. We help participants formulate and address tangible research questions and extract as much detail as possible from their data. Almost all of our courses focus on state-of-the-art technologies, and include training on dealing efficiently with the data generated, as well as on recognizing the limitations of these technologies. There is also an increasing need to promote science communication, and we need scientists who can also explain their research to their peers, the media and the public. We provide speaking opportunities for young researchers through flash talk sessions, poster sessions, and our many networking events.

## How can attending an EMBL event help with career development?

Networking is the pivot around which our programme revolves. We provide our participants with a forum to interact with

other researchers, speakers and journal editors during our events. We also use collaboration tools that allow delegates to communicate with each other even after they return home. Over 65% of our delegates have said they acquired useful career contacts or formed new collaborations, 40% state they have gone on to achieve success in grant applications thanks to knowledge and skills developed on our courses, and 25% of our participants say that the skills they learnt on an EMBL course helped them get a promotion.

## What does the future hold for EMBL training?

We're expanding our programme to focus on the impacts of climate change, including topics such as population dynamics and species diversity, and biological approaches towards ecosystem preservation and restoration. Other pertinent issues include personalized medicine and the uses of machine learning and artificial intelligence in the life sciences. EMBL is building a new imaging centre at its main laboratory in Heidelberg, Germany. Therefore, we will be developing new training courses on high-level image analysis and expanding our offering of cryo-EM training, too.



# Courses and Conferences EMBL 2020

## JANUARY

20–24 Jan · EMBL Course  
Deep Learning for Image Analysis  
21–24 Jan · EMBL Course  
Introduction to RNA-Seq and Functional Interpretation  
28–30 Jan · EMBL Course  
Exploratory Analysis of Biological Data: Data Carpentry

## FEBRUARY

2–7 Feb · EMBL Course  
Analysis and Integration of Transcriptome and Proteome Data  
5–7 Feb · EMBL Conference  
Expanding the Druggable Proteome with Chemical Biology  
10–13 Feb · EMBL Course  
Immune Profiling of Single Cells  
11–12 Feb · EMBL Course  
Exploring Human Genetic Variation

## MARCH

1–4 Mar · EMBO | EMBL Symposium  
The Organism and its Environment  
1–6 Mar · EMBO Practical Course  
Techniques for Mammary Gland Research  
2–6 Mar · EMBL Course  
Introduction to Multiomics Data Integration and Visualisation  
8–11 Mar · EMBL Conference  
Advances in Stem Cells and Regenerative Medicine  
9–12 Mar · EMBL Course  
Circulating Tumour DNA in Clinical Applications  
10–12 Mar · EMBL Course  
Bioinformatics Resources for Protein Biology  
15–18 Mar · EMBO | EMBL Symposium  
Inter-Organ Communication in Physiology and Disease  
15–20 Mar · EMBO Practical Course  
FISHing for RNAs: Classical to Single Molecule Approaches  
16–20 Mar · EMBL Course  
Data Visualisation for Biology: A Practical Workshop on Design, Techniques and Tools  
29 Mar–1 Apr · EMBO | EMBL Symposium  
The Four-Dimensional Genome  
30 Mar–1 Apr · Wellcome Genome Campus · EMBL Conference · Hinxton  
Proteomics in Cell Biology and Disease Mechanisms  
30 Mar–2 Apr · EMBL Course  
Introduction to Metabolomics Analysis  
30 Mar–3 Apr · EMBL Course  
Target Engagement in Biology and Drug Discovery

## APRIL

20–22 Apr · EMBL Conference · Hinxton  
2nd European Network Biology Conference: From Networks to Modelling  
20–24 Apr · EMBL Course  
RNA-Sequence Analysis  
20–27 Apr · EMBO Practical Course  
Microbial Metagenomics: A 360° Approach  
22–24 Apr · EMBO Workshop  
The Epitranscriptome  
23–24 Apr · EMBL Course  
Advanced Network Analysis and Visualisation in Cytoscape

## MAY

3–9 May · EMBO Practical Course  
Measuring Translational Dynamics by Ribosome Profiling  
6–9 May · EMBO Workshop  
Microglia 2020

11–14 May · EMBO | EMBL Symposium  
Cellular Mechanisms Driven by Liquid Phase Separation  
11–15 May · EMBL Course  
Fundamentals of Widefield and Confocal Microscopy and Imaging  
11–15 May · EMBL Course  
Starting Single-Cell RNA-Seq Analysis  
18–20 May · EMBL Conference  
BioMalPar XVI: Biology and Pathology of the Malaria Parasite  
18–22 May · EMBL Course  
CABANA: Understanding Biodiversity Through Bioinformatics Based Approaches  
24–29 May · EMBL Course  
Advanced Fluorescence Imaging Techniques  
25–29 May · EMBL Course  
Hands-on Flow Cytometry – Learning by Doing!

## JUNE

3–6 Jun · EMBO | EMBL Symposium  
Microtubules: From Atoms to Complex Systems  
8–10 Jun · EMBL Course  
Design Thinking: Approaches for Chronic Disease Management  
8–12 Jun · EMBL Course  
Whole Transcriptome Data Analysis  
16–26 Jun · EMBO Practical Course  
Advanced Electron Microscopy for Cell Biology  
17–19 Jun · EMBL Course  
Bioinformatics for Principal Investigators  
17–19 Jun · EMBL Course  
Managing a Bioinformatics Core Facility  
21–26 Jun · EMBO Practical Course  
Quantitative Proteomics: Strategies and Tools to Probe Biology  
22–26 Jun · EMBL Course  
Summer School in Bioinformatics  
28 Jun–1 Jul · EMBO | EMBL Symposium  
Innate Immunity in Host-Pathogen Interactions  
28 Jun–3 Jul · EMBO Practical Course  
Drosophila Genetics and Genomics  
29 Jun–3 Jul · EMBL Course  
Cancer Genomics

## JULY

6–10 Jul · EMBL Course  
Systems Biology: From Large Datasets to Biological Insight  
6–11 Jul · EMBL Course  
Super-Resolution Microscopy  
12–14 Jul · EMBL Conference  
Microfluidics: Designing the Next Wave of Biological Inquiry  
13–17 Jul · EMBL Course  
Metagenomics Bioinformatics  
19–22 Jul · EMBO | EMBL Symposium  
Defining and Defeating Metastasis  
19–24 Jul · EMBO Practical Course  
Molecular Geobiology  
15–24 Jul · EMBL Course  
Proteomics Bioinformatics

## AUGUST

23–31 Aug · EMBO Practical Course  
Cryo-Electron Microscopy and 3D Image Processing  
29 Aug–1 Sep · EMBL Conference  
Transcription and Chromatin  
31 Aug–4 Sep · EMBL Course  
Gene Expression at Spatial Resolution

## SEPTEMBER

2–5 Sep · EMBO Workshop  
Chemical Biology 2020  
7–14 Sep · EMBL Course  
Membrane Protein Expression, Purification and Characterisation (mPEPC2)

14–17 Sep · EMBO | EMBL Symposium  
The Neurovascular Interface  
14–18 Sep · EMBL Course  
Structural Bioinformatics  
14–19 Sep · EMBL Course  
Liquid Biopsies  
20–22 Sep · EMBO | EMBL Symposium  
The Molecular Basis and Evolution of Sexual Dimorphism  
27 Sep–2 Oct · EMBL Course  
Genome Engineering: CRISPR/Cas  
28 Sep–2 Oct · EMBL Course  
Whole Transcriptome Data Analysis  
30 Sep–3 Oct · EMBL Conference  
Molecular Mechanisms in Evolution and Ecology

## OCTOBER

3–9 Oct · EMBO Practical Course  
Advanced Methods in Bioimage Analysis  
5–8 Oct · EMBL Course  
Single-Cell RNA-Sequence Analysis  
7–10 Oct · EMBO | EMBL Symposium  
The Complex Life of RNA  
12–15 Oct · EMBL Course  
FFPE/cfDNA NGS Library Prep for Genome and Methylation Analysis  
13–14 Oct · EMBO | EMBL Conference  
Gender Roles and Their Impact in Academia  
14–16 Oct · EMBL Course  
Exploring Biological Sequences  
19–23 Oct · EMBL Course  
CABANA: Bioinformatics for Plant Biology  
20–22 Oct · EMBL Course  
Computing Skills for Reproducible Research: Software Carpentry  
21–24 Oct · EMBO | EMBL Symposium  
Organoids: Modelling Organ Development and Disease in 3D Culture  
26 Oct–1 Nov · EMBL Course  
Solution Scattering from Biological Macromolecules  
28–31 Oct · EMBO Workshop  
Neuroepigenetics: From Cells to Behaviour and Disease

## NOVEMBER

2–5 Nov · EMBL Course  
Bioinformatics and Functional Genomics in Zebrafish  
3–5 Nov · EMBL Course  
Protein Quality Control for Downstream Processes  
4–5 Nov · EMBL Science and Society Conference  
Our House is Burning: Scientific and Societal Responses to Mass Extinction  
8–11 Nov · EMBO | EMBL Symposium  
Biological Oscillators: Design, Mechanism, Function  
11–12 Nov · EMBL Course  
Transgenic Animals – Micromanipulation Techniques  
15–18 Nov · EMBL Conference  
From Functional Genomics to Systems Biology  
15–21 Nov · EMBO Practical Course  
Single-Cell Omics  
22–27 Nov · EMBO Practical Course  
Extracellular Vesicles: From Biology to Biomedical Applications  
23–27 Nov · EMBL Course  
Next Generation Sequencing Bioinformatics  
26–28 Nov · EMBL Conference  
22nd EMBL PhD Symposium

## DECEMBER

6–8 Dec · EMBO Workshop  
In situ Structural Biology – From Cryo-EM to Integrative Modelling  
7–11 Dec · EMBL Course  
CABANA: Genomic Data for Surveillance of Communicable Disease

