EMBL Strategic plans, 2020 Procurements & Flagship Projects

BSBF 2nd Webinar, 09. October 2020

Evelyne Cudraz
Head of Purchase

EMBL

About EMBL

EMBL is **Europe's flagship laboratory for the life sciences** – an **intergovernmental organisation** with more than 80 independent research groups covering the spectrum of molecular biology.

With **27 member states**, laboratories at **six locations across Europe** and thousands of scientists and engineers working together, EMBL is a powerhouse of biological expertise.

EMBL currently employs **1.800 people** in Barcelona, Grenoble, Hamburg, Heidelberg, Hinxton near Cambridge (UK), and Rome.

Headquartered in Heidelberg and **founded in 1974** with the mission of promoting molecular biology research in Europe, training young scientists, and developing new technologies.

Publishing hundreds of research articles and hosting dozens of **conferences** every year, EMBL is pouring out biological insights and training Europe's future scientific talent.

EMBL presence throughout Europe

Barcelona

EMBL's site in Spain specialises in tissue biology and disease modelling

Grenoble

EMBL's site in France is a centre for structural biology studies

Hamburg

Research in structural biology benefits from the powerful accelerator facilities on Hamburg's DESY campus

EMBL presence throughout Europe

Heidelberg

EMBL's administrative headquarters and host to five research units and core facilities

Hinxton

EMBL EBI uses its comprehensive data resources to enable discoveries worldwide

Rome

EMBL's site in Italy is a centre for research in epigenetics and neurobiology

Key figures

Founded in
1974

27
Member States

€ 113m
Annual member states contributions

1.800
Staff

93
Nationalities

71%
of staff from member states

63m
Daily requests on average to EMBL-EBI data resources in 2019

EMBL missions

EMBL was set up to **promote molecular biology across Europe**, and to create a centre of excellence for training Europe's leading young molecular biologists.

To accomplish this, EMBL pursues **five missions:**

- **Perform excellent fundamental research in molecular biology**
- **To offer vital services to scientists in the member states and the world** (Provide space and equipment while digital services such as molecular databases serve millions of users each year)
- **To train scientists, students, and visitors at all levels**
- **To actively engage in technology transfer and industry relations**
- **To coordinate and integrate European life science research** (by initiating collaborative projects between scientists in Europe and the wider world)

EMBL Strategic plan & Financial facts

EMBL

EMBL indicative scheme

Indicative scheme

EMBL's activities are planned in **five-year cycles** and outlined in a document called the EMBL Programme.

Every five years, the member states that fund and govern EMBL agree a funding plan called the **Indicative Scheme**, which will support the EMBL Programme.

EMBL's next indicative scheme will start in 2022.

EMBL strategic plan

Programme 2022-2026

As the current EMBL Programme (2017-2021) is approaching its end, one of the most important tasks for the Director General (since 2019, Edith Heard) is to develop a vision and plan for **next EMBL Programme (2022-2026)**.

New research directions have been identified that will enable us to:

- Gain novel molecular and mechanistic insights into **biodiversity** and our **environment**
- **Integrate environmental information into our understanding of organisms**
- Understand the **impact of humans on the environment** and of **the environment on humans**
- **Provide solutions** not just alerts to global challenges
- **Understand life at the molecular level** while considering the planet we occupy

EMBL strategic plan

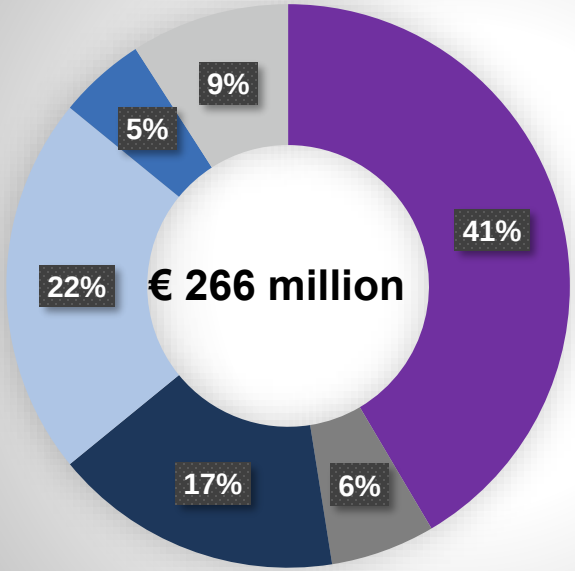
This programme will help address scientific and global societal challenges:

- Antibiotic resistance
- Biodiversity collapse
- Climate change
- Pollution
- Emergence of infectious diseases
- Pandemics

Healthy ecosystems are fundamental to life on our planet and to the well-being of humanity.

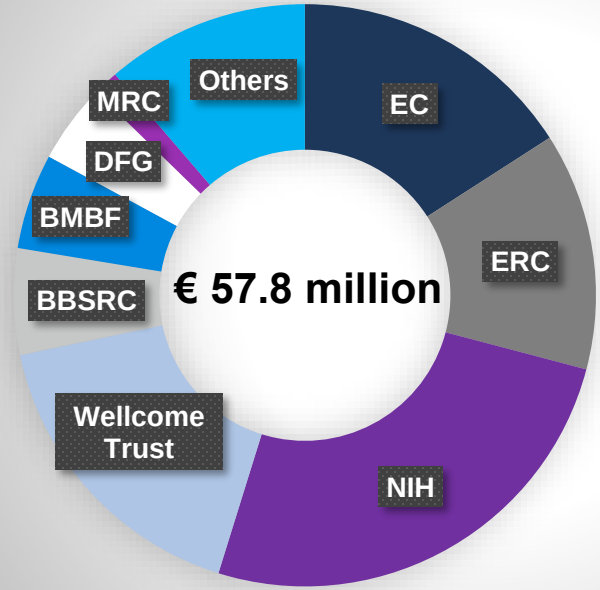
EMBL financial facts

Total income in 2019



- Member state contributions
- Member state special contributions
- Internal tax
- External grant funding
- Other external grant funding
- Other receipts

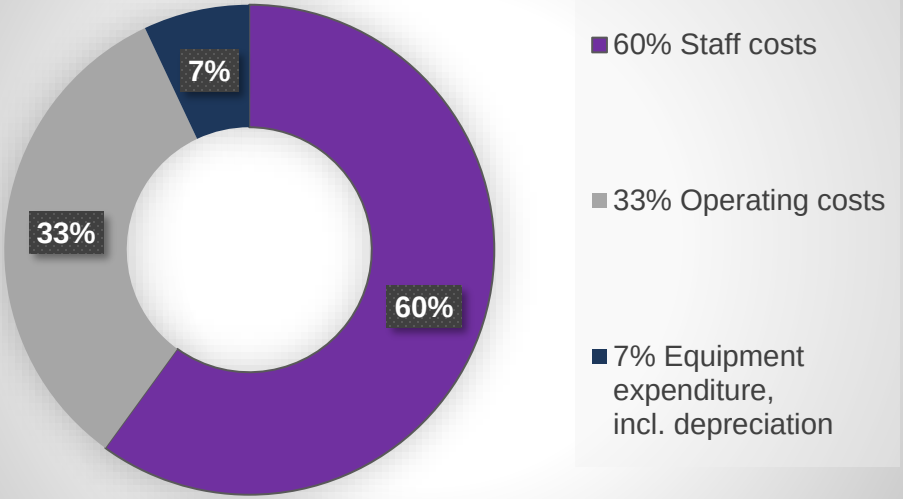
External grant funding in 2019



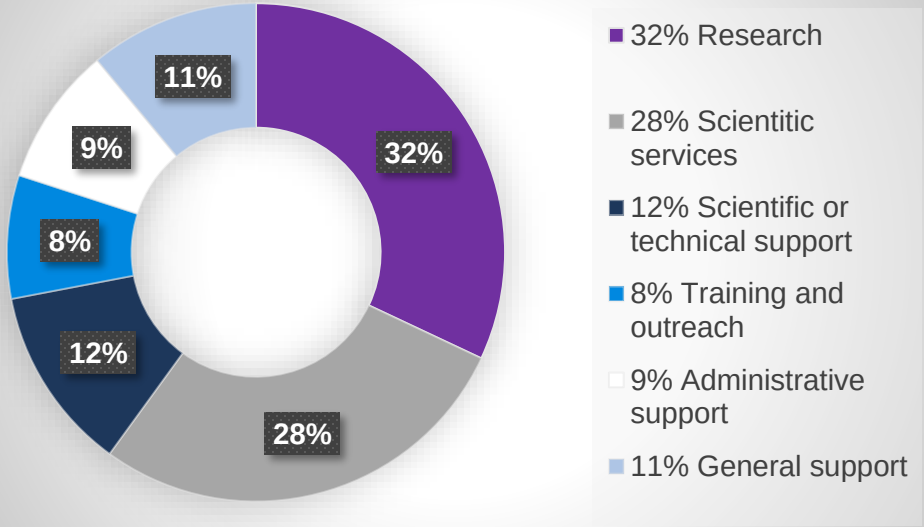
15.9%	EC
13.2%	ERC
25.7%	NIH
16.9 %	Wellcome Trust
5,9%	BBSRC
5,3%	BMBF
4,4%	DFG
1,4%	MRC
11,3%	Others

EMBL financial facts

Total expenditure in 2019



Expenditure by area of activity in 2019



EMBL 2020 procurements

(01.01.2020 till 15.09.2020)

EMBL

Microscopy

All sites

Total € 10,8 million

High Throughput wide-field system	400k€
Fast resonant-scanning confocal	400k€
Fast 3D imaging system	400k€
Lightsheet microscope	500k€
Ultramicroscope	400k€
Two-Photon microscope	300k€
Confocal laser scanning microscope	600k€
Super resolution microscope	400k€
Confocal imaging microscope	400k€
Cryo electron microscopes	7 million €

Diverse laboratory equipment and consumables

All sites

Total € 8 million

Chemicals, enzymes, oligos	4,6 million €
Consumables (glass, plastic, etc.)	1,6 million €
Laboratory diverse equipment	1,8 million €

IT Services

EBI Hinxton

Research and Innovation projects /SPF (Strategic Priority Funds)

The Strategic Priorities Fund (SPF) delivered by UK Research and Innovation is one of the UK's largest, publicly funded, programmes of work to spearhead multi- and interdisciplinary research and innovation.

EMBL has been awarded **£44.5m (2020/24)** to fund the ongoing expansion of technical infrastructure.

Total 7,4 million £

High Performance Storage	1.9 million £	Virtual Infrastructure Storage	1.3 million £
High Performance Compute	1.7 million £	High Capacity Disks	400k £
Scale-Out NAS Storage	1.8 million £	Network Infrastructure	300k £

IT Services

Other sites

Total 1,6 million €

Data centre for the Imaging Centre	250k€
Storage/High Performance Storage	800k€
Cloud object storage	250k€
Cloud compute cluster	300k€

Construction

Heidelberg

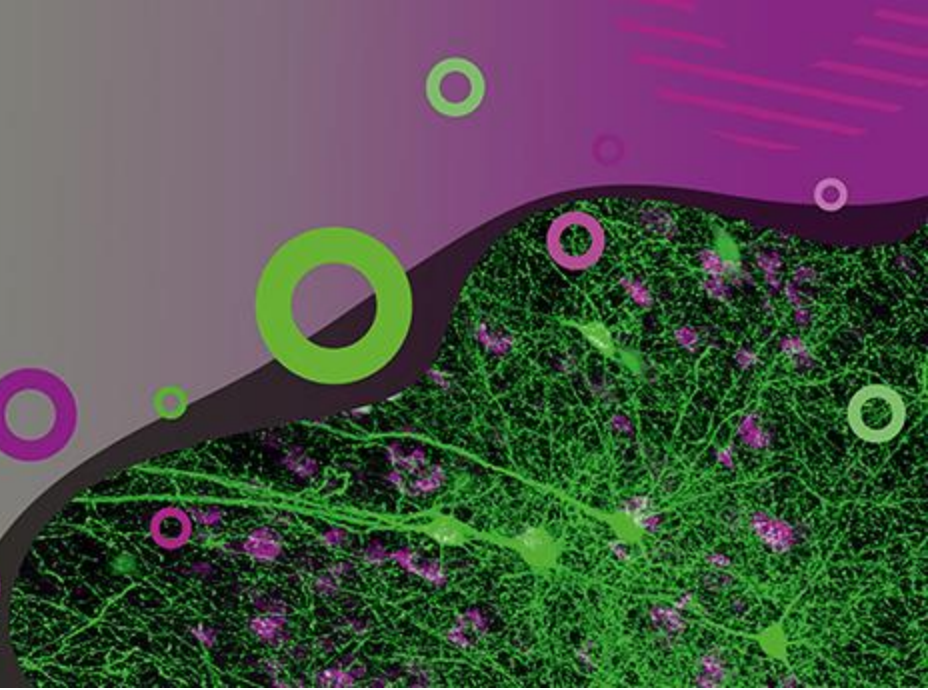
EMBL extension Kindergarten		EMBO Building extension	
Project value	600.000 EUR	Project value	4,7 million EUR
Project timeline	Finished by end of 2020	Project timeline	Finished by the end of 2022
Project in pictures		Project in pictures	

Construction

Rome

Refurbishment/New building	
Project value	**€ 8,7 million**
Start date	2021
Project in pictures	

EMBL Industry Relations



EMBL

EMBL four pillars of relations with the industry

Corporate Partnership Programme

A facilitating platform for mutually beneficial interactions between EMBL and industry.

Together we support the development and promotion of innovative and ground-breaking scientific events in Europe.

Co-development of training, products and services, as well as in the broader sector of technology transfer.

EMBL-EBI Industry Programme

Forum for interaction and knowledge exchange for those employed at the forefront of industrial bioinformatics.

It is a subscription-based programme for companies that make significant use of the data and resources provided by EMBL-EBI as a core part of their R&D.

Member companies: top 20 pharmaceutical companies and several major agri-food, nutrition and healthcare companies.

Technology Transfer

EMBL is actively engaged in developing its discoveries to benefit society.
EMBL Enterprise Management Technology Transfer GmbH (EMBLEM) is an affiliate and the commercial arm of the Laboratory.
EMBLEM manages a portfolio of more than 1000 inventions and over 450 patents/copyrights.

Venture Capital

EMBL Ventures invests in core technologies throughout Europe with global potential. Focus: life-science investments.

Aim: build companies that create significant commercial opportunities based on new therapeutic treatment modalities and pharmaceuticals, next generation enabling technology platforms or innovations in the diagnostics and medical device area.

Corporate Partnership Programme EMBL-Heidelberg

Founder Partners

Leica MICROSYSTEMS
OLYMPUS

Associate Partners

MERCK
Nikon
SANOFI
Promega
Roche
SARTORIUS
NEW ENGLAND BioLabs Inc.

Corporate Partners

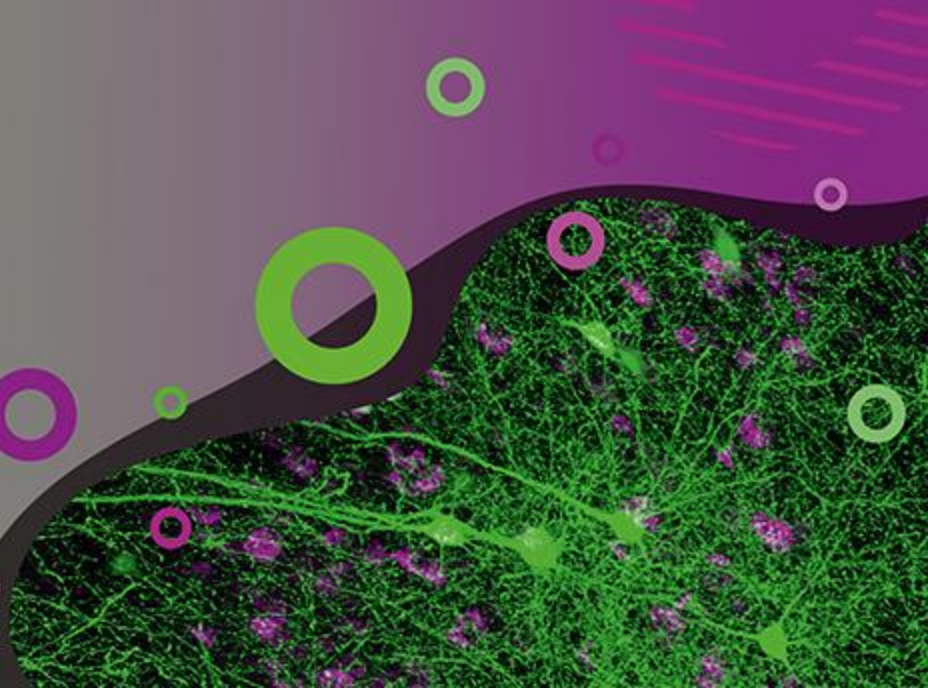
10x GENOMICS
BD
BIO-RAD
Boehringer Ingelheim
eppendorf
gsk
Miltenyi Biotec
NetApp
STILLA
ThermoFisher SCIENTIFIC

The EMBL-EBI Industry Programme

Industry Programme Members: Pharmaceutical companies

Agri-food/consumer goods companies

EMBL Flagship project Imaging Centre



EMBL

The EMBL Imaging Centre

The EMBL Imaging Centre

Opening

Set to **open in 2021**, the EMBL Imaging Centre will be the newest addition to the EMBL campus in Heidelberg.

Purpose

It will be a unique **microscopy service facility for state-of-the-art high and ultra-high resolution electron and light microscopy techniques**, including new developments not yet commercially available.
EMBL is cooperating with the leading microscopy companies Leica Microsystems, Thermo Fisher Scientific and ZEISS Research Microscopy Solutions.

Audience

The centre will be **open to visiting scientists from all over the world as well as industry partners.** It will make new imaging technologies at EMBL available to foster a better understanding of the molecular basis of life and disease.

The EMBL Imaging Centre

Financial aspects

This project has been made possible by a **special contribution of Germany and the Land Baden-Württemberg, private companies and donations.**

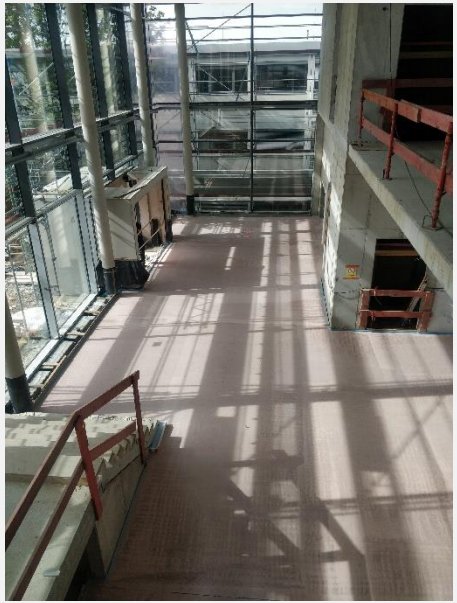
The total cost of the EMBL Imaging Centre will be around **€48 million.**

Of this, €28 million will be used for the building itself and €20 million on the initial equipment of microscopes and supporting IT infrastructure.

The BMBF is providing the largest financial contribution for the new Imaging Centre with funding of €29.7 million.

The EMBL Imaging Centre

Current project status in pictures



EMBL Flagship project of the past and of the future
TARA Oceans

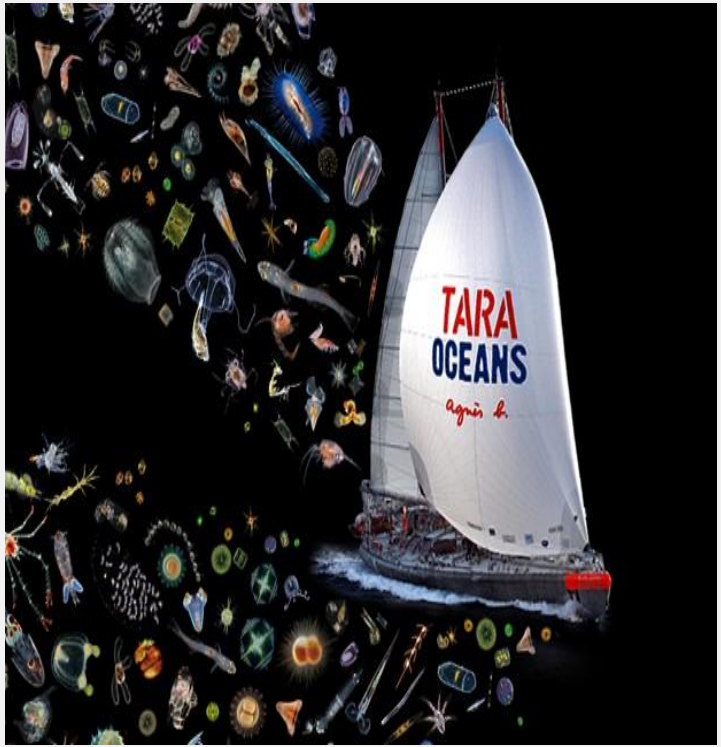
EMBL

TARA Oceans expedition 2009-2013

Exploring the invisible

Mission
Planetary study of marine plankton

Plankton's invisible and largely unexplored biodiversity is an important **marker of the state of our planet and its climate system.**



Why?
The data collected by Tara is crucial because any variation in plankton composition can have an **impact on the planet's balance of gases.**

Who?
E. Karsenti, visiting GL, EMBL
E. Bourgois, President of the Tara Expeditions Foundation & CEO of *agnès b.*

TARA Oceans expedition 2009-2013
Key figures

150.000 kms across all oceans of the globe

60 Stop-overs

40 countries

90 crew-members

40 nationalities

1.140 days of expedition

210 sampling stations

160 scientists

23 laboratories involved

35.000 samples collected

Up to 50 million ocean viruses in a sea water cup

TARA Oceans recent activities
May-November 2019

Mission
Studying microplastic pollution in the major rivers of Europe

Identify the sources of pollution

Understand **microplastics fragmentation in rivers** and predict their dispersion towards the ocean

Define their toxicity and impacts on marine biodiversity and the food chain

Goal
The collection of regional data will help identify local sources of plastic pollution and will **aid the development of local policies to reduce the quantity of microplastics** that make it out to the sea.

EMBL's role
EMBL continues to make crucial contributions in data analysis, data storage, and in making all data publicly available.

EMBL-EBI stores the genomics data produced by the expedition.

TARA microplastics expedition
Key figures

9
European rivers

18
Stop-overs

Partnership with 17 laboratories coordinated by CNRS

Biologists
Chemists
Ecotoxicologists
Physicists
Oceanographers
Modelers

Tara stops in the ports close to EMBL's sites:

A range of activities were offered to engage the public, scientists, stakeholders, local authorities and the private sector in order to raise awareness of the risks of microplastic pollution.

EMBL held events such as talk and press conferences about EMBL's visionary fundamental research and technology development in the life sciences.

EMBL SARS-CoV-2 related activities

EMBL

EMBL SARS-CoV-2 related activities and scientific actions

Covid-19 data portal: accelerating research through data sharing

One site where researchers can **share and access data** related to the new SARS-CoV-2.

EMBL-EBI is facilitating the **set-up of national SARS-CoV-2 data hubs** across Europe.

Data includes sequences, expression data, protein function and structures, drug targets, literature etc.

Hubs will be **used by public health agencies and research centers** doing genome sequencing of the new virus at national or regional levels.

EMBL SARS-CoV-2 related activities and scientific actions

EMBL scientific engagement in SARS-CoV2

EMBL seeks to understand how potential **COVID-19 drugs work in living cells.**

Electron microscopy specialists **collaborate with hospital researchers** to understand the changes occurring in cell structures upon SARS-CoV-2 infection.

EMBL is **exploring synthetic antibodies to stop coronavirus.** Identifying nanobodies that could bind to SARS-CoV-2 and prevent it from entering human cells.

EMBL is **hosting virtual conferences** on SARS-CoV-2.


Thank you!
Platynereis Segmented marine worms