



# A unique approach to scientific services in Europe

Scientific services are at the heart of all of EMBL's missions. EMBL provides life science researchers in Europe and beyond with access to the very latest in scientific technologies, infrastructure, and data resources. Combined with our scientific and technical expertise, these services provide researchers with the highest quality results, and enable significant fundamental research that is essential to solving global societal challenges.

EMBL's unique portfolio of integrated scientific services enables researchers from our Member States and around the world to access a broad range of world-class infrastructures and resources through a single Europe-wide partner.

EMBL's scientific services encompass over 40 bioinformatics and data resources, and more than 20 experimental services in the fields of structural biology, imaging, genomics, proteomics, metabolomics, *in vivo* gene editing, and chemical biology.

## EMBL data and experimental services at a glance



**28%** of EMBL activities are dedicated to scientific services



**24 million** unique users of EMBL databases and software tools



**5 400** user visits to EMBL experimental services



**169** courses, seminars, and workshops given by EMBL service experts in **38** countries



## EMBL's scientific service provision is based on three key principles:

### Accessible infrastructure

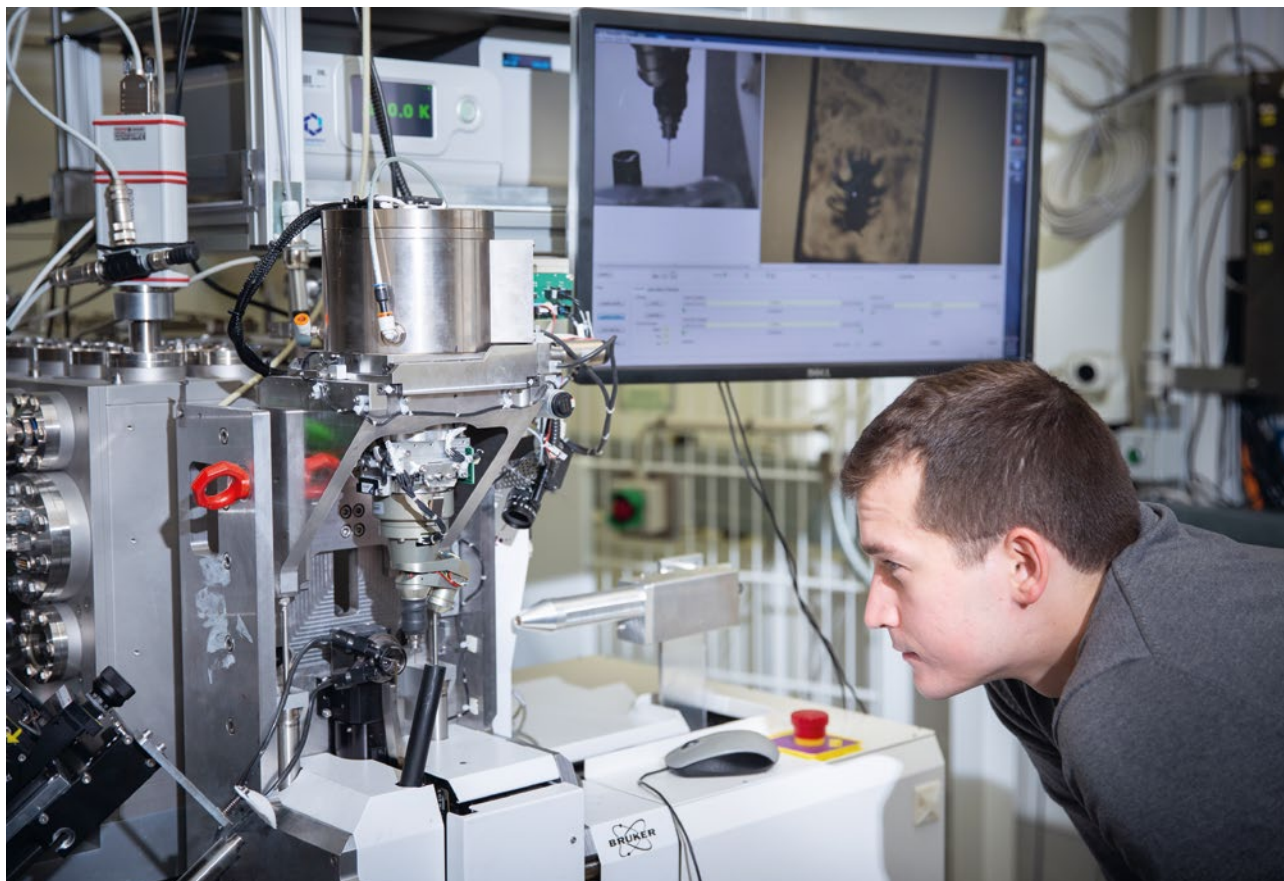
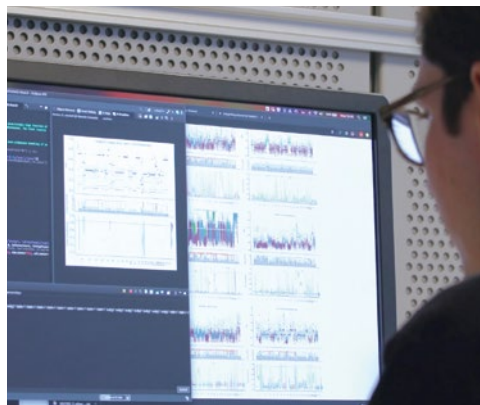
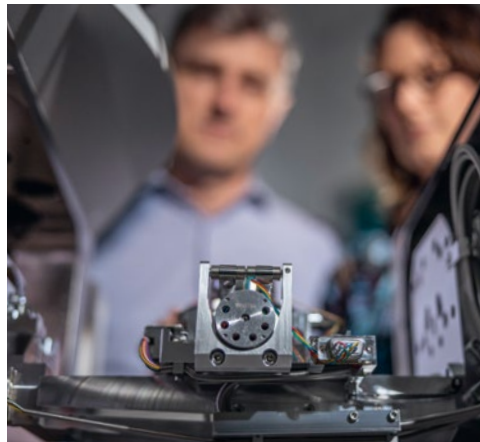
EMBL enables researchers to access state-of-the-art infrastructures and international open data resources that are beyond the means of individual research organisations.

### Invaluable expertise

EMBL provides advanced expertise in service infrastructure. From support provision to collaborative engagement, EMBL's experts help to solve experimental challenges and provide advanced training in complex technologies.

### Quality assurance

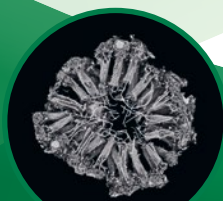
EMBL uses rigorous quality control and validation measures for optimal results. Experimental and data standards are set in collaboration with the community, enabling high-quality and consistent data generation, management, and access.



# EMBL scientific services

## Experimental services

EMBL experimental services span a range of infrastructures and facilities that support academic and industry users throughout Europe and globally. Structural biology and imaging services enable life to be visualised across scales: from atomic snapshots of moving proteins to detailed videos of molecules within cells, tissues, or organisms. EMBL also supports researchers in performing functional genomic analyses, precisely editing the genomes of cells or whole organisms, screening small molecules to gain insights into protein function, and many more activities.



### Electron microscopy

Electron Microscopy Core Facility



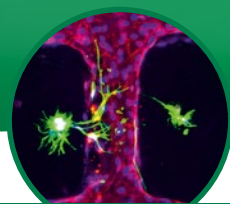
### X-ray beamlines

Macromolecular crystallography services  
Small-angle X-ray scattering services



### Multi-omics facilities

Genomics Core Facility  
Proteomics Core Facility  
Metabolomics Core Facility  
Flow cytometry facilities



### Light microscopy

Advanced light microscopy facilities  
Mesoscopic Imaging Facility



### Chemical biology services

Chemical Biology Core Facility



### *In vivo* gene editing services

Genetic and Viral Engineering Facility  
Gene Editing and Embryology Facility



### Sample preparation

High-Throughput Crystallisation Facility  
Histology Service  
Protein Expression and Purification Core Facility  
Sample Preparation and Characterisation Facility



### EMBL Imaging Centre

EMBL's Imaging Centre is a major addition to the services offered to external users. After welcoming its first users in 2021, the Centre provides the highest resolution electron and light microscopy technologies for individual and correlative use.

See a full list of EMBL's scientific services: [www.embl.org/services](http://www.embl.org/services)

## Data resources

EMBL's European Bioinformatics Institute (EMBL-EBI) develops and maintains numerous open community databases, tools, and software that are freely available to all. These make it possible to deposit, search, visualise, and reuse diverse open data produced by researchers globally. This work supports millions of researchers working in all areas of the life sciences, impacting medicine, biology, ecology, and agriculture. Types of data resources include:



### Literature Services

EuropePMC



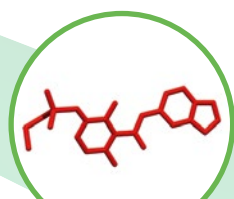
### Genes, Genomes and Variation

Ensembl  
VectorBase  
WormBase



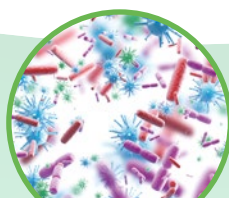
### Proteins and Protein Families

MGnify  
InterPro  
UniProt



### Chemical Biology

ChEMBL  
MetaboLights  
SureChEMBL



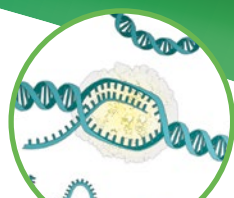
### Drug Discovery

Open Targets Platform



### Molecular Archives

COVID-19 Data Portal  
European Genome-phenome Archive (EGA)  
European Nucleotide Archive (ENA)



### Molecular Atlas

ArrayExpress  
Expression Atlas  
Proteomics IDentification (PRIDE)



### Molecular and Cellular Structure

BioImage Archive  
Electron Microscopy Data Bank (EMDB)  
Protein Data Bank in Europe (PDBe)



### Molecular Systems

Complex Portal  
IntAct  
Reactome

See a full list of EMBL's data resources: [www.ebi.ac.uk/services](http://www.ebi.ac.uk/services)



# Benefits and added value

## Research

- EMBL offers users 'end-to-end' services, from experimental design, sample preparation and data generation to data analysis and management. Novice users can receive comprehensive training and hands-on support, while experienced scientists can work independently.
- Remote access to EMBL's experimental facilities reduces the need to travel and has enabled research to continue safely during the COVID-19 pandemic.



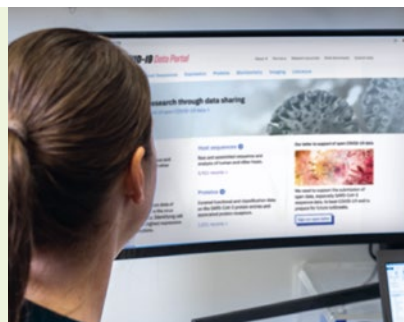
## Collaboration

- EMBL services save users the time, effort, and cost required to find collaborators with expertise in service infrastructure, by facilitating access to multidisciplinary experts and service infrastructure within a single partner.

### Open data resources

*"EMBL-EBI is providing molecular biology data to Europe and to the world, they are a trusted authoritative source on all molecular biology data."*

Prof. Inge Jonnasen  
University of Bergen/Elixir, Norway



### Beamline services

*"EMBL Grenoble beamline services offer excellent infrastructures and a fully automated process, allowing us to run the project most efficiently, saving valuable time for our work on SARS-CoV-2."*

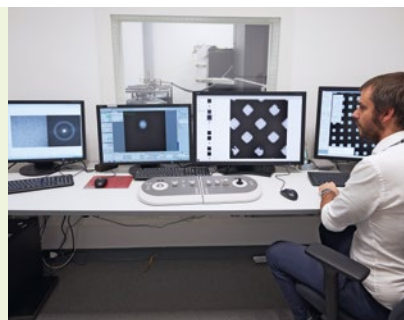
Prof. Frank Kozielski  
University College London, UK



### EMBL Imaging Centre

*"The scientists at EMBL are among the best in the world in using these techniques."*

Pia Lavriha  
ETH Zurich and Paul Scherrer Institute, Switzerland



## Sample Preparation and Characterisation Facility

*“From sample characterisation all the way to data analysis, the personal engagement and expertise of EMBL Hamburg staff have been essential to the success of our project.”*

Prof. Sebastian Springer  
Jacobs University Bremen, Germany



## Protein Expression and Purification Core Facility, Genomics Core Facility

*“With the core facilities, we developed a protocol that reduces next-generation sequencing library preparation costs by 100-fold. Sharing our results allowed the global scientific community to benefit from our expertise.”*

Prof. Lars Steinmetz  
EMBL Heidelberg, Germany/Stanford University, USA



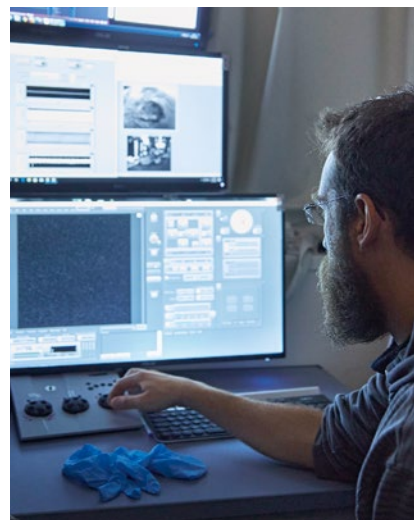
## Training

- EMBL service experts collaborate extensively with users to give them technical training and provide troubleshooting support and bespoke advice.
- EMBL service experts share their knowledge with students and researchers through practical and theoretical courses held online, at host institutions, and at EMBL sites.



## Technology development and innovation

- EMBL co-invents bespoke technologies with partners in technology development companies. These technologies are made available to users to drive their discoveries. EMBL's new Imaging Centre is a prime example of the cutting-edge facilities that EMBL offers users, and includes academically developed methods not yet commercially available.
- EMBL transfers its technology and expertise to national facilities and institutes. For example, 80 instruments co-developed by X-ray beamline specialists at EMBL and technology partners are currently installed at 26 sites worldwide.



## Society

- EMBL benefits the global scientific community and society at large by promoting open science and continually sharing knowledge.



**EMBL Barcelona**

PRBB Campus  
Barcelona, Spain

**EMBL European Bioinformatics Institute**

Wellcome Genome Campus  
Hinxton, United Kingdom

**EMBL Grenoble**

EPN Science Campus  
Grenoble, France

**EMBL Hamburg**

DESY Campus  
Hamburg, Germany

**EMBL Heidelberg**

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Norway | Poland | Portugal | Slovakia | Spain | Sweden  
Switzerland | United Kingdom | Australia (associate member state)

**EMBL prospect member states**

Estonia | Latvia

