The European Molecular Biology Laboratory
Europe’s only intergovernmental laboratory for life science research

- Excellent research
- Scientific services
- Advanced training
- Innovation and translation
- Integrating life sciences

- 6 sites
- 1900 staff (high turnover, 9-year rule)
- 96 nationalities
- 27 member states
- 82 million daily web requests to EMBL data services
- >6700 user visits to access scientific services
# EMBL Member States

## Member states (27)

<table>
<thead>
<tr>
<th>Country</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>1974</td>
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<tr>
<td>Denmark</td>
<td>1974</td>
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<tr>
<td>France</td>
<td>1974</td>
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<tr>
<td>Germany</td>
<td>1974</td>
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<tr>
<td>Israel</td>
<td>1974</td>
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<tr>
<td>Italy</td>
<td>1974</td>
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<tr>
<td>Netherlands</td>
<td>1974</td>
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<tr>
<td>Sweden</td>
<td>1974</td>
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<tr>
<td>Switzerland</td>
<td>1974</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>1974</td>
</tr>
<tr>
<td>Finland</td>
<td>1984</td>
</tr>
<tr>
<td>Greece</td>
<td>1984</td>
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<tr>
<td>Norway</td>
<td>1985</td>
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<tr>
<td>Spain</td>
<td>1986</td>
</tr>
<tr>
<td>Belgium</td>
<td>1990</td>
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<tr>
<td>Portugal</td>
<td>1998</td>
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<tr>
<td>Ireland</td>
<td>2003</td>
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<tr>
<td>Iceland</td>
<td>2005</td>
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<tr>
<td>Croatia</td>
<td>2006</td>
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<tr>
<td>Luxembourg</td>
<td>2007</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>2014</td>
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<tr>
<td>Malta</td>
<td>2016</td>
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<tr>
<td>Hungary</td>
<td>2017</td>
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<tr>
<td>Slovakia</td>
<td>2018</td>
</tr>
<tr>
<td>Montenegro</td>
<td>2018</td>
</tr>
<tr>
<td>Lithuania</td>
<td>2019</td>
</tr>
<tr>
<td>Poland</td>
<td>2019</td>
</tr>
</tbody>
</table>

## Associate member states

- Australia 2008

## Prospect member states

- Estonia
- Latvia

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[Map of Europe showing member states and prospect member states]
Six Sites with 1900 People and 96 Nationalities

- EMBL-EBI: Bioinformatics
- Grenoble: Structural biology
- Barcelona: Tissue biology and disease modelling
- Hamburg: Structural biology
- Heidelberg: Life sciences
- Rome: Epigenetics and neurobiology
EMBL’s Missions

**Excellent research**
- To perform fundamental research in molecular biology

**Scientific services**
- To offer vital services to scientists in the member states and the world

**Advanced training**
- To train scientists, students, and visitors at all levels

**Innovation and translation**
- To actively engage in technology transfer and industry relations

**Integrating life sciences**
- To coordinate and integrate European life science research
# Scientific Services

<table>
<thead>
<tr>
<th>Data resources</th>
<th>Structural Biology</th>
<th>Imaging</th>
<th>Core Facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>82m daily web requests to EMBL-EBI data services</td>
<td>5400 annual user visits to structural biology and imaging services</td>
<td></td>
<td>1300 users of multi-omics, chemical biology, <em>in vivo</em> gene editing, and sample preparation facilities</td>
</tr>
</tbody>
</table>

Visit [embl.org/services](http://embl.org/services) to find out more

2020 metrics shown
# Key Impact Assessments

## Annual Metrics and Regular Reporting

Annual reporting EMBL member states as part of the Annual Report

Regularly reporting about EMBL’s engagement with member states to their ministries

## Impact of Experimental Services

Reporting the value and impact of EMBL experimental services used by scientists in member states to member state ministries

## Value of Data Resources

Reporting the value and impact of EMBL data resources used by scientists in member states to member state ministries
Annual Metrics and Regular Reporting

Conveying the value that member states receive for their contributions

Metrics are collected yearly from EMBL departments and grouped according to five missions

Used in documents and slides given to member states to show the value that member states receive from EMBL

Key indicators for member states include:
- Number of publications in collaboration
- Number of service users
- Number of course and conference participants

Data could be more efficiently collected and better aligned and standardised across departments

Ongoing work to standardise and align metrics from EMBL experimental services
Impact of Experimental Services

Review assessed the impact of EMBL experimental services for external users

Carried out in 2021 to garner support from primary funders and promote EMBL experimental services to member states.

Technopolis Group consultancy firm were commissioned to undertake a survey of past users and write impact case studies.

Predominantly qualitative findings showcased the unique selling points and strengths of EMBL experimental services.

Technopolis’ key findings:

- Facilities are critical for research
- Facilities pioneer integrative services
- Facilities enable more research of higher quality
- Facilities ensure wider benefits for the research ecosystem
- Results contribute to solving global and societal challenges and generating economic impact
- Facilities support technology transfer and build industry relations
- Facilities are valued at €17.5 m per annum
Impact of Experimental Services

91% of users said access to EMBL experimental services was vital for their research

70% of users indicated that EMBL experimental services delivered wider societal impacts

“By using EMBL experimental services our lab started to add new techniques to our toolbelt. We widened our range of methodological expertise.”
EMBL academic user, Portugal

“Top notch facility that serves users in the best possible manner”
EMBL academic user, United Kingdom

“EMBL provides streamlined access to state-of-the-art instruments indispensable for structural biology studies.”
EMBL academic user, Finland
Value of EMBL-EBI Data Resources

Survey assessed the value of EMBL-EBI data resources to external users

Carried out in 2021 as a follow-up to the previous report released in 2016 to garner support from primary funders

Charles Beagrie consultants were commissioned to undertake a survey and economic analysis of EMBL-EBI managed data resources

Predominantly quantitative findings showcased the exceptional economic value EMBL-EBI data resources provide

The value and impact of EMBL-EBI managed data resources

<table>
<thead>
<tr>
<th>VALUE User community</th>
<th>IMPACT Wider society</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investment value EMBL-EBI plus collaborators £110 million per annum</td>
<td>Return on Investment in R&amp;D (Estimated)</td>
</tr>
<tr>
<td>Access value £65.5 million per annum</td>
<td>£2.2 billion annually up to £15 billion NPV over 30 years of which £1.3 billion annually up to £9 billion NPV over 30 years from additional use depending on EMBL-EBI</td>
</tr>
<tr>
<td>Use value £5.5 billion per annum (Benefit/Cost 49)</td>
<td>Efficiency savings Range of time savings (from time spent with data from EMBL-EBI to overall work time)</td>
</tr>
<tr>
<td>Willingness to accept £68 600 per respondent, per annum</td>
<td>£2.6 billion to £11 billion per annum (Benefit/Cost 2.3-102)</td>
</tr>
<tr>
<td>Willingness to pay £12.5 billion per annum (Benefit/Cost 11)</td>
<td>De-duplication £6bn per annum</td>
</tr>
</tbody>
</table>

Note: NPV is Net Present Value. All estimates rounded. Source: Authors’ analysis
# Value of EMBL-EBI Data Resources

<table>
<thead>
<tr>
<th>Research Efficiency</th>
<th>Research and Development</th>
</tr>
</thead>
<tbody>
<tr>
<td>For every £1 spent providing EMBL-EBI resources, researchers save time worth up to £102</td>
<td>Research and Development facilitated by the use of EMBL-EBI managed data resources is estimated at up to £2.2 billion annually</td>
</tr>
</tbody>
</table>

Add up to £11 billion in annual benefits to researchers and funders due to more efficient research

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**£1** spent providing EMBL-EBI data resources is worth **£102** in annual benefits.

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*Research and Development* facilitated by the use of EMBL-EBI managed data resources is estimated at up to **£2.2 billion** annually.

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*“EMBL-EBI has transformed what I and my team and students are able to conceptualise and achieve. Wouldn’t be able to do one tenth of what I can or have done over the last 20 years.”*

**User Survey respondent, UK**

*My work will collapse without EMBL-EBI resources.”*

**User Survey respondent, Israel**

*It is an important educational example for future generations. Simply put.”*

**User Survey respondent, Spain**

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[Image: Data-driven discovery]
## Challenges and Lessons

### Challenges

- Multi-site location
- Different facilities with different users and working models
- Survey had to be bespoke
- No guarantee about which case studies would be the most impactful
- Engaging past users to take a long survey
- Stakeholders to understand the value of different types of impact

### Lessons

- Buy-in from staff involved in the activities being reported on was crucial
- Regular reports provide continuous and current information to stakeholders
- Regular complementary surveys to better understand demographic of user community would be useful
Access to Both Reports
Thank you!