Programme and activities

The elements of the EMBC General Programme are:

• EMBO Fellowship Programme
• EMBO Courses and Workshops Programme
• EMBO Young Investigator Programme
• EMBO Science Policy Programme

Additional activities include

• EMBO|EMBL Symposia
• Career Development
• The EMBO Meeting
• EMBO Global Exchange
• EMBO Women in Science
• EMBC Special Project: Strategic Development Installation Grants (SDIG)
• EMBO Scientific Publications

Fellowship Programme

1. Long-Term Fellowships

"To provide a fair number of fairly junior post-doctoral posts...These post doctoral fellows should be sent to the labs most appropriate for their work....Neither the number of fellowships awarded to citizens of any particular country, nor the number of fellows sent to work in that country should be related to the financial contribution of that country, such questions being decided on scientific merit alone."

C.H. Waddington, proposal accepted in Ravello, September 1963; endorsed at first meeting of EMBO Council, February 1964.

The EMBO Long-Term Fellowships are two-year fellowships offered to highly qualified young scientists for postdoctoral training. Postdoctoral researchers are a major driving force in research laboratories and are thus an important component in the advancement of science.

The fellowships allow the recipient to carry out a research project in a top laboratory anywhere in the world. Fellowships are awarded to applicants who have proven, through their doctoral work, that they can contribute to the body of scientific knowledge by having published significant research results in peer-reviewed journals. In addition to the scientific qualification of the applicants, the host laboratories chosen by the applicants are evaluated to ensure that these talented scientists get the best possible training.

EMBO was founded based on the recognition that cross-border exchange and collaboration are vital for the advancement of science. Therefore, recipients of fellowships need to move to another country after completing their PhD, but a European component must be preserved: either a fellow moves from or between EMBC Member States, or a fellow from overseas comes to an EMBC Member State.

In 1966 the EMBO Long-Term Fellowships were the first and only pan-European postdoctoral fellowships. Apart from enabling training in the best laboratories around the world, the programme also provides training for leadership positions in academia and elsewhere via laboratory management courses, it offers a portable pension scheme, and has implemented extensive family support for fellows.

The selection of long-term fellows is highly competitive; EMBO Members and EMBO Young Investigators play key roles in the selection process.
process. After a pre-selection by the Fellowship Committee, each qualified candidate is interviewed by an EMBO Member or EMBO Young Investigator who is a specialist in the candidate’s area of research.

Key criteria for selection include:
- Sound and innovative research proposal
- Offer of a place in high-quality host lab
- Excellent publication record

Over the last 10 years application numbers have more than doubled, with a concomitant decrease in the success rate for applicants, from 22% to 16%. Co-funding from the European Commission Marie Curie Actions has allowed EMBO to support more fellows and has prevented a further drop in the success rates for applicants.

EMBO currently supports over 500 long-term fellows per year.
2. Short-Term fellowships

"To facilitate...visits to make temporary use of the facilities available only in a few places."

C.H. Waddington, proposal accepted in Ravello, September 1963; endorsed at first meeting of EMBO Council, February 1964.

The EMBO Short-Term Fellowships are intended to support research collaboration. They are awarded for short-term research stays between one week and three months. The short-term fellowships allow scientists to gain access to scientific expertise, new technologies or specialized equipment that is not available in their home laboratories. These exchanges facilitate collaborative research in Europe, with the added benefit of making optimal use of available resources.

The fellowships finance the travel and a daily allowance to support the applicants’ research visits. A limited number of fellowships are awarded to scientists from non-member states visiting laboratories within a member state and vice versa.

Scientists who receive short-term fellowships are generally pre- or post-graduates up to 10 years after their PhD. The programme thus contributes to the training of young scientists in Europe. Many fellowships are awarded to applicants from the peripheral member states, favouring the transfer of technology and expertise from the well-established laboratories in Europe towards the less scientifically developed EMBC Member States.

The scientific quality of each proposal is evaluated by two EMBO Members or Young Investigators who are specialists in the field of research of the applicant.

Key criteria for selection include:
- Sound research proposal and qualification/quality of the candidate
- Transfer of knowledge or technology to the sending lab
- Acceptance by host lab

Over the last 10 years application numbers have almost doubled, with a concomitant decrease in the success rate for applicants, from 64% to 52%.

EMBO supports over 200 short-term fellowships per year.

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**Definition:**
Short-term research stays between one week and three months support training, collaboration and access to specialized expertise and equipment for qualified scientists.

**Unique features:**
- Largest pan-European programme for short-term exchanges
- Fast and straight-forward selection mechanism

**Added benefit for Member States:**
- Allowing access to expertise and high-tech equipment to scientists from anywhere in Europe, thereby making best use of resources in Europe
- Attracting scientists from outside Europe to do research in Europe
Courses & Workshops Programme

"To conduct training courses. Some of these would be in specialized techniques; others in an advancing field of biology..."

C.H. Waddington, proposal accepted in Ravello, September 1963; endorsed at first meeting of EMBO Council, February 1964.

Dissemination and discussion of research results are essential elements of scientific research. Meetings and courses make state-of-the-art knowledge and technology accessible to the scientific community, promote discussions and catalyse co-operation. They are vital to the training and professional development of researchers at all career stages.

The programme funds and supports two types of events:

- Meetings for 80 to 450 participants. They focus on specific topics and allow researchers to present and debate the latest findings in the field. Five types of meetings are funded or co-funded by EMBO:
  - EMBO Workshops
  - EMBO Conference Series
  - EMBO|EMBL Symposia
  - ESF-EMBO Symposia
  - EMBO|FEBS Lecture Courses

- Practical courses for approximately 20 participants who are mostly PhD students and post docs. These courses provide hands-on training in cutting-edge techniques taught by the leaders in the field including those who invented or pioneered the technologies.

Scientists wishing to organize an event apply for funding from EMBO. Through this bottom-up process, the scientific community proposes events at the cutting edge of research. Selection by the EMBO Course Committee ensures the overall quality of the proposed programme. The support for a course or meeting comes with the prestigious EMBO label that indicates a high-quality programme.

Key criteria to secure funding include:

- Subject should be topical or embody a new approach.
- Speakers should be the best in the field.
- The organizers are required to aim for gender balance in the list of speakers.
- Participants should be balanced across junior and senior researchers. Attendance should be open to all. Ample opportunity for interaction in poster and discussion sessions is required.

Over the last 10 years the number of events supported by EMBO has risen from 43 to 75 per year; approximately 8,000 scientists participate in the meetings and courses annually.

EMBO is the largest funder of conferences in biology in Europe. The rapid evolution of new experimental approaches in the expanding field of the life sciences has led to an increase in demand for funding and support through the EMBO Courses & Workshops Programme.
Young Investigator Programme

"Noting the importance of young investigators towards the continued development and expansion of molecular biology in Europe and recognizing an opportunity for the EMBC to stimulate networking of such groups through Europe, ....It is hereby resolved that the General Programme of the EMBC be expanded to include the EMBO Young Investigator Programme as a new component."

Amendment to EMBC General Programme, June 2000 EMBC/00/9

The EMBO Young Investigator Programme selects some of the best young group leaders in Europe who are in the first phase of setting up their independent laboratories. These young scientists are in a particularly difficult stage of their academic careers. They have to compete for funds with well-established scientists while having, for the first time, to assemble a research team and advise the junior researchers in their groups. The programme closes a gap between EMBO Fellows and EMBO Members.

Within its networking activities, the programme supports interactions between EMBO Young Investigators by funding:

- Joint group meetings
- Guest lectures by young investigators at the institutes of other young investigators
- Collaboration visits
- Student research visits
- Special interest focus groups on a growing number of topics
- Visits by an EMBO Member who functions as a mentor
- Lectures by young investigators at international meetings
- Training in basic management skills through EMBO Laboratory Management Courses

In addition, selected scientists receive an award of 15,000 euros per year for three years and can apply annually for small grants of up to 10,000 euros from funds provided by EMBO Council.

The EMBO Young Investigator Programme was the first initiative in Europe to address the needs of young independent research group leaders and is unique in its focus on effective networking activities, offering support and promoting exchange between the young scientists. The network has already expanded into the peripheral member states, offering full membership to the Installation Grantees (see 4.5).

The selection is highly competitive and involves a personal interview by an EMBO Member expert in the area of research of the applicant.

Key criteria for selection include:

- Highly competitive and innovative research proposal
- Excellent track record

Over 250 scientists have been distinguished as EMBO Young Investigators since the launch of the programme in 2000. The success rate for application is around 13%.

Definition:
Selection of the best young independent group leaders in Europe and support of networking and training.

Unique features:
- Only programme to offer networking activities
- Pioneered development of management training for scientists

Added benefit for Member States:
- Highlighting talented researchers and future leaders
- Incorporating researchers from peripheral member states
- Setting standards for national programmes
Science Policy

The EMBO Science Policy Programme was initiated in April 2011, and was developed in part from the former EMBO Science & Society Programme. A significant success of EMBO was its role in the establishment of the European Research Council (ERC) as part of its work as a founding member of the Initiative for Science in Europe (ISE).

EMBO is well placed to assemble experts who can advise European and national policy makers.

The EMBO Science Policy Programme aims to:

• Contribute to the development of European biology research policy by interacting directly with key European policymakers and organizations.
• Foster dialogue between scientists, policymakers, and other stakeholders. The programme will organize meetings and produce general briefing documents on scientific questions of public interest, thereby contributing to an informed public debate.

The programme will contribute to the debate on:

• Research funding issues
• Working conditions for researchers
• Responsible conduct of research
• The place of science as an important pursuit in society
• The governance of scientific research and its resulting technologies
• Institutional hierarchies

Anticipated programme activities include:

• Coordination of efforts in the interest of the scientific community, the EMBO community, and other interested parties.
• Direct interaction with European policymakers, science administrators, and other scientific organizations.
• Development of materials that address policymakers, scientists, and interested publics. Policy research results will be presented as policy options, position statements, briefs, and white papers.

Definition:
Contributing to European biology research policy by fostering dialogue between scientists, policymakers, and other stakeholders.

Unique feature:
• Access to international group of experts in all areas of the life sciences

Added benefit for Member States:
• Contributing towards a European view in life science research policy
Career Development

The European Council has declared it Europe’s goal to become the most competitive and dynamic knowledge-based economy in the world. Well-trained science graduates are the most important resource for the future of European science.

If future demands are to be met, good students must be attracted to science careers. The career path for science graduates must be transparent and competitive with alternative career options. The quality and extent of training is a key aspect of a successful science career.

The EMBO programmes and activities offer training to researchers at all levels and support the academic career progression of science graduates, in particular through:

- Fellowships
- Courses & Workshops
- Laboratory Management Courses specifically developed by EMBO for young group leaders and post docs
- Young Investigators
- Installation Grants

The EMBO Life Sciences Mobility Portal (LSMP) is the most comprehensive European open-access web-based resource for those seeking financial support, training and employment in the life sciences. It thereby supports mobility and career progression of young researchers.

The annual scientific conference, The EMBO Meeting, offers training in career management and personal development for young scientists before the start of the conference.
The EMBO Meeting

The EMBO Meeting is a conference held annually since 2009. It offers a broad programme that attracts scientists from Europe and abroad and stimulates scientific exchange between them. The conference raises the awareness of Europe as a major player in life sciences research. The conference also offers an opportunity to bring EMBO activities to the attention of a wider audience.

At the conference, participants hear from leaders in their fields in keynote addresses, plenary sessions and concurrent sessions on a wide range of topics. The programme also includes:

- the EMBO Gold Medal lecture
- a special lecture from a renowned scientist working outside the life sciences
- a science and society/science policy session
- a women in science session

In addition, young scientists attend non-scientific skill training sessions, Meet the Speaker lunches, and scientific career debates. Posters are exhibited during the meeting with the opportunity for the material described being selected for oral presentation.

More than 1,300 participants have been attending The EMBO Meeting. Affordable registration fees allow students and young scientists from all countries to participate. Around 50 companies and societies support the conference through sponsorship and exhibitor activities.

EMBO Global Exchange

Cutting-edge research is increasingly being performed globally. The global linkage of both intellectual and economic resources will enrich and ultimately advance science worldwide to the benefit of society.

EMBO Global Exchange makes scientists outside Europe aware of the excellent opportunities for research and collaborations in Europe. In the long term, EMBO envisions Europe as a prime destination for scientists throughout the world looking for scientific training and co-operation, resulting in an exchange of ideas and resources.

EMBO/EMBC engage in co-operation agreements with selected countries. The partner countries provide funds that allow their scientists to benefit from the core activities of EMBO. These co-operation agreements are based on mutual interest for stronger interactions and open new opportunities for exchange.
EMBO Women in Science

"...bringing about change will require positive action at all levels, including the adoption of new legislation, adjustment of institutional policies and practices, identification and elimination of discriminatory behaviour, and greater support for young women during the early periods of their career."

EMBO Council: EMBO Position Paper, December 2001

EMBO monitors gender balance in all its activities, develops initiatives to counteract imbalances and raises awareness of issues faced by women scientists in their careers.

The organization has pioneered many actions in support of women and families, in particular for postdoctoral fellows and young investigators.

Long-Term Fellowships:
- Paid parental leave
- Option to take on Fellowship on part-time basis
- Crèche support for fellows with children under 6 years of age
- Re-start conditions for applicants who have taken a break for childcare
- Allowance for dependent spouses and children.

Young Investigator Programme:
- Extension of eligibility for female applicants with children by one year per child.

Courses & Workshops:
- 30% of speakers at EMBO-funded events should be female.
- Discussion sessions on women in science are supported at EMBO-funded events.

Many of these conditions have been adopted by other national and international funding programmes.

EMBO has organized two widely recognized conferences on the topic. A position paper issued by EMBO Council and the conference proceedings summarized the results. An EMBO study analysed the different career developments of male and female life scientists.¹

Together with the Federation of European Biochemical Societies (FEBS), EMBO annually recognizes an outstanding female life scientist based in Europe for her contributions to science with the FEBS|EMBO Women in Science Award.

Definition:
Monitoring gender balance in EMBO activities, supporting discussion session on the topic at EMBO sponsored events and highlighting female scientists with the FEBS/EMBO Women in Science Award.

Unique features:
- Unique investigation published
- Organizes international conferences
- EMBO position paper on Women in Science

Added benefit for Member States:
- Raising awareness for the specific issues facing female life scientists

¹ A persistent problem - Traditional gender roles hold back female scientists
Anna Ledin, Lutz Bornmann, Frank Gannon & Gerlind Wallon, EMBO reports 8, 11, 982-987 (2007)
EMBC Special Project: Strategic Development Installation Grants (SDIG)

The Strategic Development Installation Grants, known as the EMBO Installation Grants, support efforts of some Member States – presently Croatia, Czech Republic, Estonia, Hungary, Poland, Portugal, and Turkey – to attract talented young scientists who, by setting up independent research groups, will contribute to the development of centres of excellence in the respective countries.

Participating EMBC Member States entirely fund the grants whereby successful applicants receive 50,000 euros annually for three to five years.

Receiving institutions and candidates apply together to gain funding beyond normal start up packages plus other benefits associated with the EMBO Young Investigator Programme. The commitment and support of the receiving institute during and beyond the tenure of the grant is essential to the ultimate success of EMBO Installation Grants to ensure continued support of the recipient’s academic career.

Key criteria for selection include:

- Sound and innovative research proposal
- Competitive offer from host institute
- Excellent publication record

Forty-one Installation Grantees have been selected out of 233 applicants since the launch of the programme in 2007.

Definition:
Attracting talented scientists to set up research groups in participating Member States.

Unique feature:
- Participation in the EMBO Young Investigator network

Added benefit for Member States:
- "Brain-gain" of researchers
- Rejuvenation of science base
EMBO Scientific Publications

“The EMBO should increase the coherence and strengthen the voice of European molecular biologists by establishing a new monthly journal for the rapid publication of primary research reports of broad interest.”

The EMBO Journal, Volume 1, Number 1, 1982: foreword by John Tooze, EMBO Executive Secretary (1973–1994), and Klaus Weber, Secretary General of EMBO (1981-1984)

The most visible global impact of EMBO is through its four scientific journals, The EMBO Journal, EMBO reports, Molecular Systems Biology and EMBO Molecular Medicine. The journals publish research as well as authoritative comment and reviews for an international readership. All four journals have professional editors who are supported by international editorial advisory boards of leading experts and referees.

Publication of research results in peer-reviewed scientific journals is the means by which scientists formally present their research to the scientific community. Journals also represent a permanent archive of validated research progress. Publication in highly regarded scientific journals such as the EMBO publications is a key measure of research success and represents an essential component of academic research evaluation globally. For this reason EMBO has developed innovative means to ensure that selection of manuscripts is entirely based on quality.

As a not-for-profit organization, EMBO is reinvesting the surplus generated by the publications into the EMBO General Programme and the development of new initiatives.

The EMBO publications receive annually over 4,500 submissions of research manuscripts from scientists and publish over 500 of these as research articles, following rigorous peer review.

EMBO has recently received high praise for increasing the transparency of the peer-review process and is currently developing new publishing models in response to debates within the scientific community.

Definition:
The four scientific publications, The EMBO Journal, EMBO reports, Molecular Systems Biology (MSB) and EMBO Molecular Medicine, publish original research results, reviews, commentary and editorial, general interest articles.

Unique features:
• Among top 30 publications in the biological sciences worldwide according to ISI Thompson
• Innovative publishing and peer-review

Added benefit for Member States:
• Adding European presence in high level scientific publishing
• Profits are reinvested into the EMBO programmes